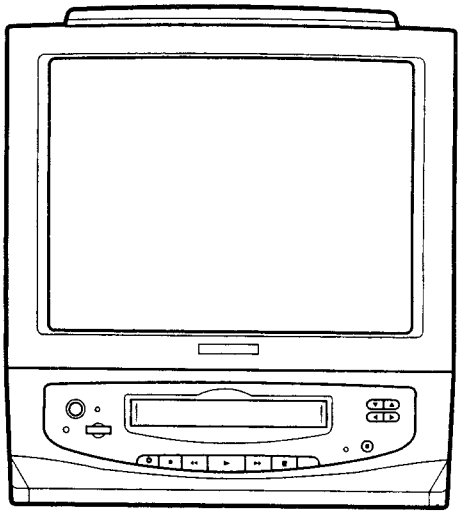
GoldStar

SUMMARY

VHS TVCR ViewMax™

SERVICE MANUAL



CHASSIS : MV-55A

SUMMARY

SPECIFICATIONS

Video

Video (Chroma) Signal Processing System	PAL/SECAM-B/G /NTSC 4.43 (VCR playback only)
Video Recording System	2 Rotary head helical scanning system
Head	Two heads
Tape Mode	SP
Tape Format	VHS, width 1/2"
Timer Program	1 Year, 5 programs, NORMAL/Daily/Weekly REC
Tape Loading System	Front loading
Input/Output Signal Level	1 Vp-p, 75Ω unbalanced

Audio

Audio Recording System	Normal
Head	Normal(MONO)
Input/Output Signal Level	Input (0.5Vrms, 10 kΩ ↑), Output (0.5Vrms, 1 kΩ ↓)

General

Power Source	AC 180-270 V, 50/60 Hz
Power Consumption	Approx. 100 Watts
Channel Capability	VHF: 2-12, UHF: 21-69, CATV: S1-S20, HYPER (S21-S41)
Tuning System	Voltage Synthesizer
Antenna	UHF/VHF (75 ohm)
Sound Output	4Wmax. at 50KHz deviation
Operating Condition	5°C~35°C, less than 80% RH
Dimensions	14": 368(W)X402(D)X436(H)mm 20": 502(W)X467(D)X545(H)mm
Weight	14': 14.8Kg 20': 24.0Kg

* Specifications are subject to change without notice, for improvement.

Abbreviations : Used in this book

ADJ	Adjustment or Adjust	H	Horizontal
AFC	Automatic Frequency Control	V	Vertical
AGC	Automatic Gain Control	IC	Integrated Circuit
AMP	Amplifier	OSD	On-Screen Display
CPT	Color Picture Tube	SAP	Second Audio Program
DEF	Deflection	BPF	Band Pass Filter
DET	Detector	ST	Stereo
FBT	Flyback Transformer	LPF	Low Pass Filter
H.V	High Voltage	DP	Delay Phase
OSC	Oscillator	DG	Delay Group
SEP	Separator	PLL	Phase Locked Loop
SYNC	Synchronization	APC	Automatic Phase Control
S.I.F	Sound Intermediate Frequency	BM	B+ Main
V.I.F	Video Intermediate Frequency	BT	B+ Tuning

SAFETY PRECAUTIONS

IMPORTANT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These parts are identified by ⚠ in the Schematic Diagram and Replacement Parts List.
It is essential that these special safety parts should be replaced with the same components as recommended in this manual to prevent X-RADIATION, Shock, Fire, or other Hazards.
Do not modify the original design without permission of manufacturer.

SUMMARY

General Guidance

An **Isolation Transformer should always be used** during the servicing of a receiver whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks.

It will also protect the receiver and it's components from being damaged by accidental shorts of the circuitary that may be inadvertently introduced during the service operation.

If any fuse (or Fusible Resistor) in this TV receiver is blown, replace it with the specified.

When replacing a high wattage resistor (Oxide Metal Film Resistor, over 1W), keep the resistor 10mm away from PCB.

Keep wires away from high voltage or high temperature parts.

Due to high vacuum and large surface area of picture tube, extreme care should be used in **handling the Picture Tube**. Do not lift the Picture tube by it's Neck.

X-RAY Radiation

Warning:

The source of X-RAY RADIATION in this TV receiver is the High Voltage Section and the Picture Tube.
For continued X-RAY RADIATION protection, the replacement tube must be the same type tube as specified in the Replacement Parts List.

To determine the presence of high voltage, use an accurate high impedance HV meter.

Adjust brightness, color, contrast controls to minimum.
Measure the high voltage.
The meter reading should indicate
23.5 ± 1.5KV: 14-19 inch, 26 ± 1.5KV: 19-21 inch,
29.0 ± 1.5KV: 25-29 inch, 30.0 ± 1.5KV: 32 inch
If the meter indication is out of tolerance, immediate service and correction is required to prevent the possibility of premature component failure.

Before returning the receiver to the customer,

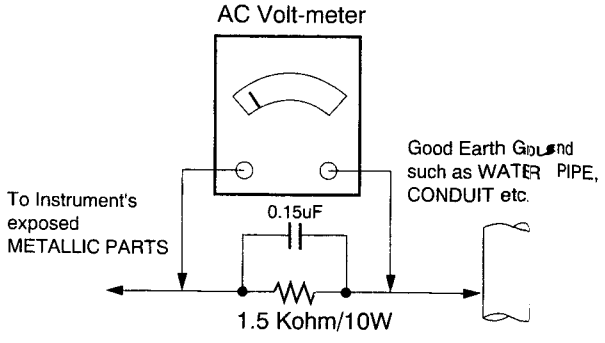
always perform an **AC leakage current check** on the exposed metallic parts of the cabinet, such as antennas, terminals, etc., to be sure the set is safe to operate without damage of electrical shock.

Leakage Current Cold Check(Antenna Cold Check)

With the instrument AC plug removed from AC source, connect an electrical jumper across the two AC plug prongs. Place the AC switch in the on positioin, connect one lead of ohm-meter to the AC plug prongs tied together and touch other ohm-meter lead in turn to each exposed metallic parts such as antenna terminals, phone jacks, etc.
If the exposed metallic part has a return path to the chassis, the measured resistance should be between 1MΩ and 5.2MΩ.
When the exposed metal has no return path to the chassis the reading must be infinite.
An other abnormality exists that must be corrected before the receiver is returned to the customer.

Leakage Current Hot Check (See below Figure)
Plug the AC cord directly into the AC outlet.
Do not use a line Isolation Transformer during this check.
Connect 1.5K/10watt resistor in parallel with a 0.15uF capacitor between a known good earth ground (Water Pipe, Conduit, etc.) and the exposed metallic parts.
Measure the AC voltage across the resistor using AC voltmeter with 1000 ohms/volt or more sensitivity.
Reverse plug the AC cord into the AC outlet and repeat AC voltage measurements for each esposed metallic part. Any voltage measured must not exceed 0.75 volt RMS which is corresponds to 0.5mA.
In case any measurement is out of the limits sepcified, there is possibility of shock hazard and the set must be checked and repaired before it is returned to the customer.

Leakage Current Hot Check circuit



SERVICING PRECAUTIONS

CAUTION: Before servicing receivers covered by this service manual and its supplements and addenda, read and follow the *SAFETY PRECAUTIONS* on page 3 of this publication.

NOTE: If unforeseen circumstances create conflict between the following servicing precautions and any of the safety precautions on page 3 of this publication, always follow the safety precautions. Remember: Safety First.

General Servicing Precautions

1. Always unplug the receiver AC power cord from the AC power source before;
   a. Removing or reinstalling any component, circuit board module or any other receiver assembly.
   b. Disconnecting or reconnecting any receiver electrical plug or other electrical connection.
   c. Connecting a test substitute in parallel with an electrolytic capacitor in the receiver.
      CAUTION: A wrong part substitution or incorrect polarity installation of electrolytic capacitors may result in an explosion hazard.
   d. Discharging the picture tube anode.
2. Test high voltage only by measuring it with an appropriate high voltage meter or other voltage measuring device (DVM, FETVOM, etc) equipped with a suitable high voltage probe. Do not test high voltage by "drawing an arc".
3. Discharge the picture tube anode only by (a) first connecting one end of an insulated clip lead to the degaussing or kine aquadag grounding system shield at the point where the picture tube socket ground lead is connected, and then (b) touch the other end of the insulated clip lead to the picture tube anode button, using an insulating handle to avoid personal contact with high voltage.
4. Do not spray chemicals on or near this receiver or any of its assemblies.
5. Unless specified otherwise in this service manual, clean electrical contacts only by applying the following mixture to the contacts with a pipe cleaner, cotton-tipped stick or comparable nonabrasive applicator; 10% (by volume) Acetone and 90% (by volume) isopropyl alcohol (90%-99% strength)
   CAUTION: This is a flammable mixture.
   Unless specified otherwise in this service manual, lubrication of contacts in not required.
6. Do not defeat any plug/socket B+ voltage interlocks with which receivers covered by this service manual might be equipped.
7. Do not apply AC power to this instrument and/or any of its electrical assemblies unless all solid-state device heat sinks are correctly installed.
8. Always connect the test receiver ground lead to the receiver chassis ground before connecting the test receiver positive lead.
   Always remove the test receiver ground lead last.
9. ***Use with this receiver only the test fixtures specified in this service manual.***
   CAUTION: Do not connect the test fixture ground strap to any heatsink in this receiver.

Electrostatically Sensitive (ES) Devices

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called *Electrostatically Sensitive (ES) Devices.* Examples of typical ES devices are integrated circuits and some fieldeffect transistors and semicounductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed to prevent potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminium foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static type solder removal device. Some solder removal devices not classified as "anti-static" can generate electrical charges sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminium foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.
   CAUTION: Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the bruching together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device.)

General Soldering Guidelines

1. Use a grounded-tip, low-wattage soldering iron and appropriate tip size and shape that will maintain tip temperature within the range or 500° F to 600° F.
2. Use an appropriate gauge of RMA resin-core solder composed of 60 parts tin/40 parts lead.
3. Keep the soldering iron tip clean and well tinned.
4. Thoroughly clean the surfaces to be soldered. Use a mall wirebristle (0.5 inch, or 1.25cm) brush with a metal handle. Do not use freon-propelled spray-on cleaners.
5. Use the following unsoldering technique
   a. Allow the soldering iron tip to reach normal temperature. (500° F to 600° F)
   b. Heat the component lead until the solder melts.
   c. Quickly draw the melted solder with an anti-static, suction-type solder removal device or with solder braid.
      CAUTION: Work quickly to avoid overheating the circuitboard printed foil.
6. Use the following soldering technique.
   a. Allow the soldering iron tip to reach a normal temperature (500° F to 600° F)
   b. First, hold the soldering iron tip and solder the strand against the component lead until the solder melts.

c. Quickly move the soldering iron tip to the junction of the component lead and the printed circuit foil, and hold it there only until the solder flows onto and around both the component lead and the foil.
CAUTION: Work quickly to avoid overheating the circuit board printed foil.
d. Closely inspect the solder area and remove any excess or splashed solder with a small wire-bristle brush.

IC Remove/Replacement
Some chassis circuit boards have slotted holes (oblong) through which the IC leads are inserted and then bent flat against the circuit foil. When holes are the slotted type, the following technique should be used to remove and replace the IC. When working with boards using the familiar round hole, use the standard technique as outlined in paragraphs 5 and 6 above.

Removal
1. Desolder and straighten each IC lead in one operation by gently prying up on the lead with the soldering iron tip as the solder melts.
2. Draw away the melted solder with an anti-static suction-type solder removal device (or with solder braid) before removing the IC.

Replacement
1. Carefully insert the replacement IC in the circuit board.
2. Carefully bend each IC lead against the circuit foil pad and solder it.
3. Clean the soldered areas with a small wire-bristle brush. (It is not necessary to reapply acrylic coating to the areas).

"Small-Signal" Discrete Transistor Removal/Replacement
1. Remove the defective transistor by clipping its leads as close as possible to the component body.
2. Bend into a "U" shape the end of each of three leads remaining on the circuit board.
3. Bend into a "U" shape the replacement transistor leads.
4. Connect the replacement transistor leads to the corresponding leads extending from the circuit board and crimp the "U" with long nose pliers to insure metal to metal contact then solder each connection.

Power Output, Transistor Device Removal/Replacement
1. Heat and remove all solder from around the transistor leads.
2. Remove the heatsink mounting screw (if so equipped).
3. Carefully remove the transistor from the heat sink of the circuit board.
4. Insert new transistor in the circuit board.
5. Solder each transistor lead, and clip off excess lead.
6. Replace heatsink.

Diode Removal/Replacement
1. Remove defective diode by clipping its leads as close as possible to diode body.
2. Bend the two remaining leads perpendiculaly to the circuit board.
3. Observing diode polarity, wrap each lead of the new diode around the corresponding lead on the circuit board.
4. Securely crimp each connection and solder it.
5. Inspect (on the circuit board copper side) the solder joints of the two "original" leads. If they are not shiny, reheat them and if necessary, apply additional solder.

Fuse and Conventional Resistor Removal/Replacement
1. Clip each fuse or resistor lead at top of the circuit board hollow stake.
2. Securely crimp the leads of replacement component around notch at stake top.
3. Solder the connections.
CAUTION: Maintain original spacing between the replaced component and adjacent components and the circuit board to prevent excessive component temperatures.

Circuit Board Foil Repair
Excessive heat applied to the copper foil of any printed circuit board will weaken the adhesive that bonds the foil to the circuit board causing the foil to separate from or "lift-off" the board. The following guidelines and procedures should be followed whenever this condition is encountered.

At IC Connections
To repair a defective copper pattern at IC connections use the following procedure to install a jumper wire on the copper pattern side of the circuit board. (Use this technique only on IC connections).

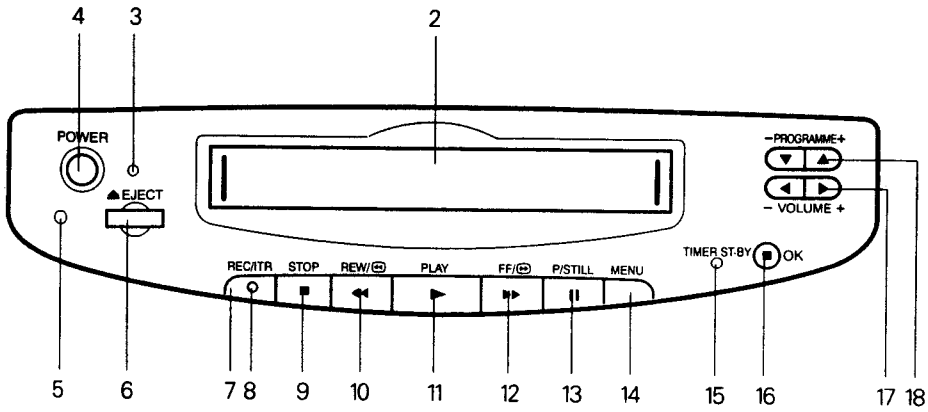
1. Carefully remove the damaged copper pattern with a sharp knife. (Remove only as much copper as absolutely necessary).
2. carefully scratch away the solder resist and acrylic coating (if used) from the end of the remaining copper pattern.
3. Bend a small "U" in one end of a small gauge jumper wire and carefully crimp it around the IC pin. Solder the IC connection.
4. Route the jumper wire along the path of the out-away copper pattern and let it overlap the previously scraped end of the good copper pattern. Solder the overlapped area and clip off any excess jumper wire.

At Other Connections
Use the following technique to repair the defective copper pattern at connections other than IC Pins. This technique involves the installation of a jumper wire on the component side of the circuit board.

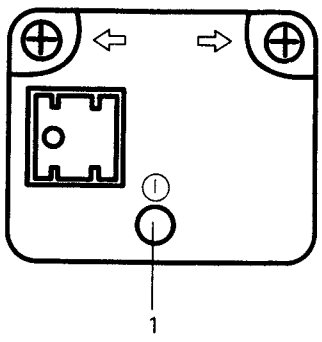
1. Remove the defective copper pattern with a sharp knife. Remove at least 1/4 inch of copper, to ensure that a hazardous condition will not exist if the jumper wire opens.
2. Trace along the copper pattern from both sides of the pattern break and locate the nearest component that is directly connected to the affected copper pattern.
3. Connect insulated 20-gauge jumper wire from the lead of the nearest component on one side of the pattern break to the lead of the nearest component on the other side. Carefully crimp and solder the connections.
CAUTION: Be sure the insulated jumper wire is dressed so that it does not touch components or sharp edges.

CONTROLS LOCATION

FRONT PANEL



(On the back cover)

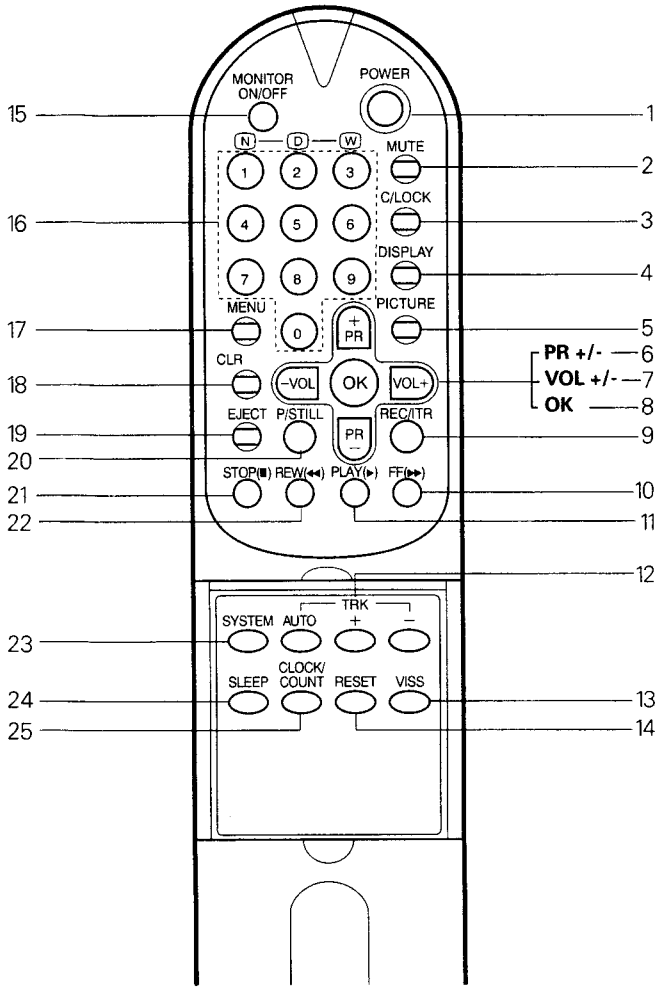


1. MAIN POWER BUTTON
2. CASSETTE COMPARTMENT
3. STAND-BY INDICATOR
4. POWER BUTTON
5. REMOTE CONTROL SENSOR
6. EJECT BUTTON
7. REC/ITR BUTTON
8. REC/ITR INDICATOR
9. STOP BUTTON
10. REW(REWIND/REVIEW) BUTTON
11. PLAY BUTTON
12. FF(FAST FORWARD/CUE) BUTTON
13. PAUSE/STILL BUTTON
14. MENU BUTTON
15. TIMER ST-BY INDICATOR
16. OK BUTTON
17. VOLUME UP/DOWN BUTTON
18. PROGRAMME UP/DOWN BUTTON

FEATURES

- Auto Programme Memory
- Manual Programme Memory
- Fine Tuning
- Programme Edit
- Clock Set (Real time, DAY/MONTH/YEAR)
- ON/OFF Timer
- SLEEP Timer (Max. 120MIN.)
- Auto Sleep ON/OFF
- Blue Back ON/OFF
- Auto Operations SYSCON
  (Auto Play, Auto Rewind, Auto Repeat, Auto Tracking)
- VISS(Video Index Search System)
- REC/ITR
- 5PR./1 Year Record Programmable Timer
- Z-SEARCH, F/R-SEARCH
- Quick Start
- Auto Head Cleaner
- FULL MENU OSD

REMOTE CONTROL UNIT



1. POWER
switches the set on from standby mode or off to standby mode.

2. MUTE
interrupts the sound temporarily. Press it again to return to previous volume level.

3. CHILD LOCK
prevents operation of the front-panel buttons.

4. DISPLAY
shows the programme number, system, time, date and VCR operation mode in tape-loaded condition.
The on-screen display disappears after a few seconds and is not recorded.

5. PICTURE
displays the picture set mode.

6. PR +/- (PROGRAMME UP/DOWN)
switches through the programme number.

7. VOL +/- (VOLUME UP/DOWN)
adjusts volume or picture quality in the picture set mode or switches the setting in menus.

8. OK
selects a menu item and stores the setting.

9. REC/ITR
Press this button for about 3 seconds to start recording.

10. FF (FAST FORWARD/CUE)
winds the tape rapidly forward while the VCR is in the stop mode.
When this button is kept pressed in the playback mode, the tape will be played back fast forward.

11. PLAY
plays back the tape.

12. TRK AUTO, +/-
selects the best picture automatically or manually in the playback mode.

13. VISS
selects the VISS (Video Index Search System) mode.

14. RESET
resets the tape counter.

15. MONITOR ON/OFF
Press this button not to monitor while recording.

16. NUMBER BUTTONS
select single- or double-digit number.

17. MENU
displays the on-screen menu.

18. CLEAR
clears an incorrect entry when programming.

19. EJECT
ejects the tape.

20. PAUSE/STILL
displays a still-picture in the playback mode.
The tape stops momentarily in the recording mode.

21. STOP
stops the tape.

22. REW (REWIND/REVIEW)
rewinds the tape in the stop mode or reviews fast the tape in the playback mode.

23. SYSTEM
selects the desired colour system.

24. SLEEP
sets the steep timer.

25. CLOCK/COUNT
displays the current time or tape counter.

DISASSEMBLY INSTRUCTIONS

1. Back Cover Removal

Remove the screws residing on the back cover and carefully separate the back cover from the front cabinet and P/cord holder bracket.(Refer to Fig. 2-1)

2. Monitor Main Chassis Removal

Grasp both sides of the main support frame and pull it back and up.

Caution:

Be carefull not to touch the main chassis and VCR chassis to each other when servicing.

3. VCR Chassis Removal

1) Remove 2 screws securing the VCR chassis to the front cabinet.(Refer to Fig. 2-2)
2) Grasp both sides of the chassis and pull it back

4. Speaker Assembly Removal

1) Remove the connectors between the spekaer and the main chassis.
2) To remove the speaker, remove the screw.

5. CRT Removal

1) After removing the monitor main chassis, VCR chassis and speaker assy, remove the CRT board from CRT neck.
2) Place the cabinet with the front down on suitable cushion.
3) Remove 4 screws securing the CRT to the cabinet.
4) Carefully separate CRT from front cabinet.

Picture Tube Handling Caution

Due to high vacuum and large surface area of picture tube, great care is needed when handling the picture tube. Always lift the picture tube by grasping it firmly around faceplate. NEVER LIFT THE TUBE BY ITS NECK. The picture tube must not be scratched or subject to excessive pressure as fracture of the glass may result in an implosion of considerable violence which can cause personal injury or property damage.

MONITOR

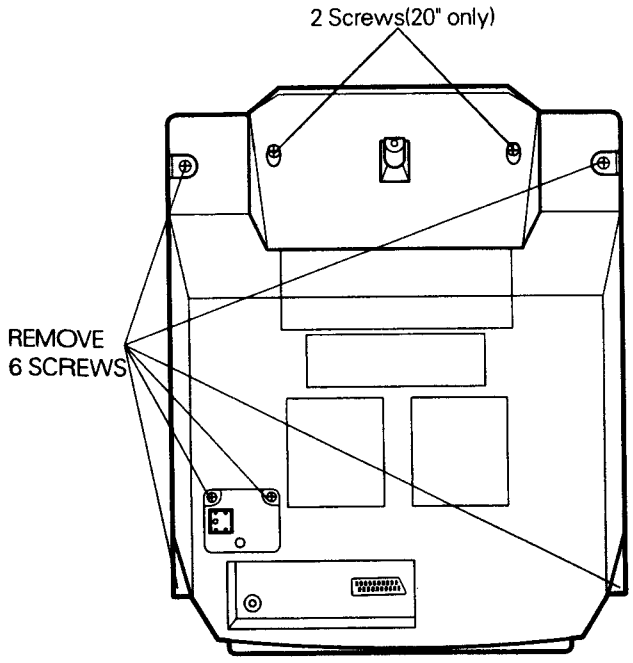


Fig. 2-1

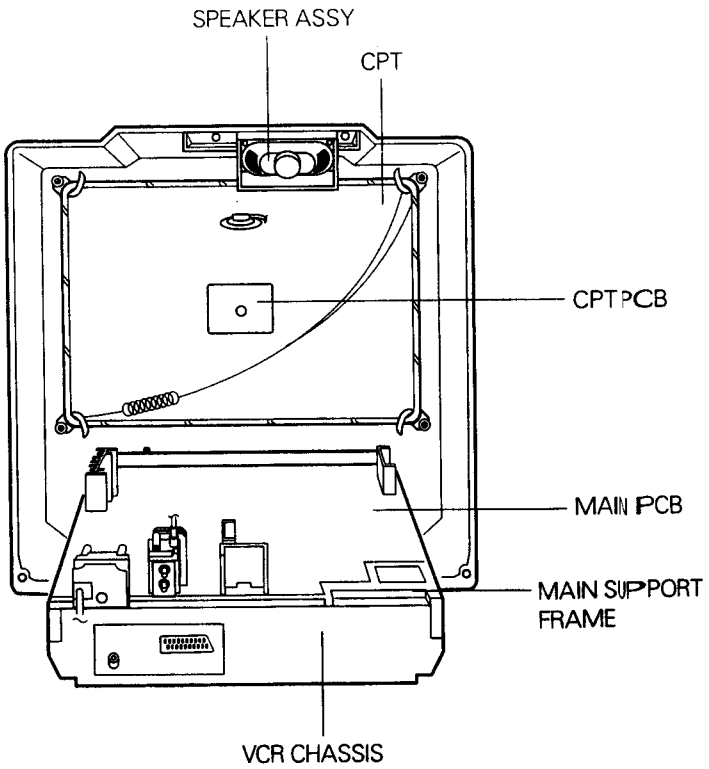


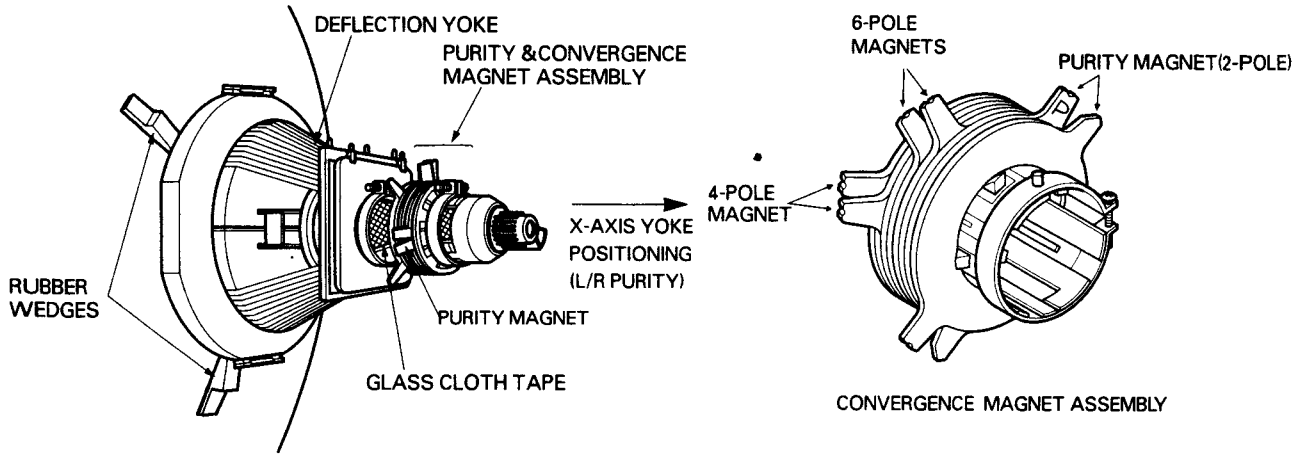
Fig. 2-2

PURITY & CONVERGENCE ADJUSTMENT

Caution:
Convergence and Purity have been factory aligned. Do not attempt to tamper with these alignments.
However, the effects of adjacent receiver components, or replacement of picture tube or deflection yoke may require the need to readjust purity any convergence.

5. Reconnect the internal degaussing coil.

6. Position the beam bender locking rings at the 9 o'clock position and the other three pairs of tabs (2,4 and 6 pole magnets) at the 12 o'clock position.



• Purity Adjustment

This procedure DOES NOT apply to bonded yoke and picture tube assemblies.
The instrument should be at room temperature (60 degrees F or above) for six (6) hours and be operating at low beam current (dark background) for approximately 20 to 30 minutes before performing purity adjustments.

CAUTION: Do not remove any trim magnets that may be attached to the bell of the picture tube.

1. Remove the AC power and disconnect the internal degaussing coil.

2. Remove the yoke from the neck of the picture tube.

3. If the yoke has the tape version beam bender, remove it and replace it with a adjustable type beam bender (follow the instructions provided with the new beam bender)

4. Replace the yoke on the picture tube neck, temporarily remove the three (3) rubber wedges from the bell of the picture tube and then slide the yoke completely forward.

7. Perform the following steps, in the order given, to prepare the receiver for the purity adjustment procedure.

   a. Face the receiver in the "magnetic north" direction.

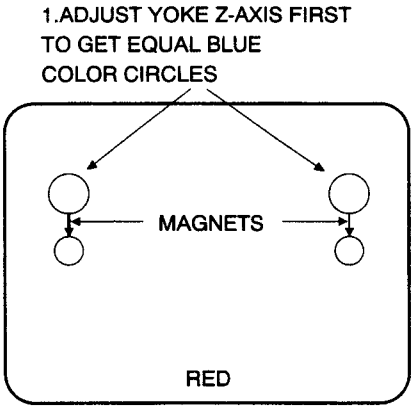
   b. Externally degauss the receiver screen with the television power turned off.

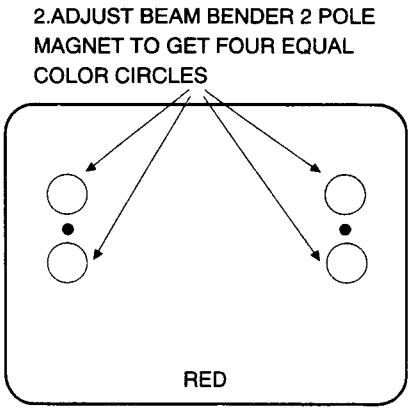
   c. Turn the television on for approximately 10 seconds to perform internal degaussing and then turn the TV off.

   d. Unplug the internal degaussing coil. This allows the thermistor to cool down while you are performing the purity adjustment. DO NOT MOVE THE RECEIVER FROM ITS "MAGNETIC NORTH" POSITION.

   e. Turn the receiver on and obtain a red raster by increasing the red bias control (CW) and decreasing the bias controls for the remaining two colors (CCW).

   f. Attach two round magnets on the picture tube screen at 3 o'clock and 9 o'clock positions, approximately one(1) inch from the edge of the mask (use double-sided tape)





8. Referring to above, perform the following two steps:
   a. Adjust the yoke Z-axis to obtain equal blue circles.
   b. Adjust the appropriate beam bender tabs to obtain correct purity (four equal circles).

9. After correct purity is set, tighten the yoke clamp screw and remove the two screen magnets.

10. Remove the AC power and rotate the receiver 180 degrees (facing "magnetic south").

11. Reconnect the internal degaussing coil.

12. Turn the receiver on for 10 seconds (make sure the receiver came on) to perform internal degaussing, and then turn the receiver off.

13. Unplug the internal degaussing coil.

14. Turn on the receiver and check the purity by holding one (1) round magnet at the 3 o'clock and a second round magnet at 9 o'clock position. If purity is not satisfactory, repeat steps 8 through 14.

15. Turn off the receiver and reconnect the internal degaussing coil.

• Convergence Adjustment

Caution: This procedure DOES NOT apply to bonded yoke and picture tube assemblies.
Do not use screen magnets during this adjustment procedure. Use of screen magnets will cause an incorrect display.

1. Remove AC power and disconnect the internal degaussing coil.

2. Apply AC Power and set the brightness to the Picture Reset condition. Set the Color control to minimum.

3. Press CUT OFF button on service remote controller.

4. Adjust the Red, Green and Blue Bias controls to get a dim white line.

5. Remove the AC power.

6. Reconnect the internal degaussing coil and apply AC power.

7. Turn the receiver on for 10 seconds to perform internal degaussing and then turn the receiver off again.

8. Unplug the internal degaussing-coil.

9. Turn on the receiver, connect a signal generator to the VHF antenna terminal and apply a crosshatch signal.

Caution: During the convergence adjustment procedure, be very careful not to disturb the purity adjustment tabs are accidentally move, purity should be confirmed before proceeding with the convergence adjustments.

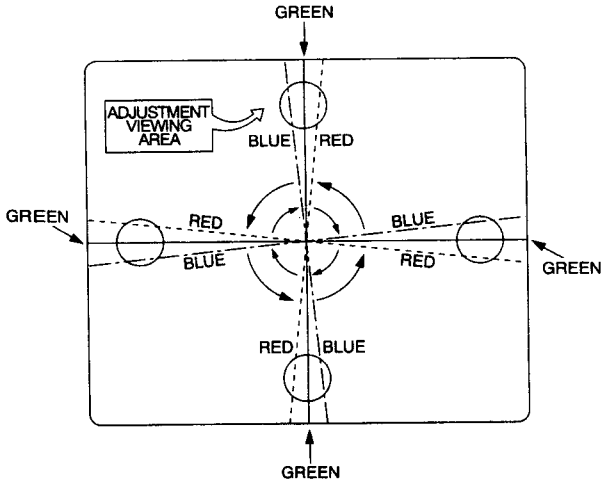
Note: Make sure the focus is set correctly on this instrument before proceeding with the following adjustment.

10. Converge the red and blue vertical lines to the green vertical line at the center of the screen by performing the following steps (below TABLE).
    a. Carefully rotate both tabs of the 4-pole ring magnet simultaneously in opposite directions from the 12 o'clock position to converge the red and blue vertical lines.
    b. Carefully rotate both tabs of the 6-pole ring magnet simultaneously in opposite directions form the 12 o'clock position to converge the red and blue (now purple) vertical lines with the green vertical line.

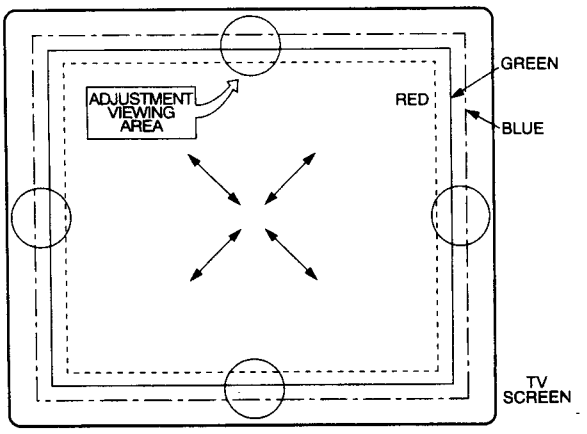
11. Converge the red and blue horizontal with the green line at the center of the screen by performing the following steps. (below TABLE)
    a. Carefully rotate both tabs of the 4-pole ring magnet simultaneously in the same direction (keep the spacing between the two tabs the same) to converge the red and blue horizontal lines.
    b. Carefully rotate both tabs of the 6-pole ring magnet simultaneously in same direction (keep the spacing between the two tabs the same) to converge the red and blue (now purple) horizontal lines with the green horizontal line.
    c. Secure the tabs previsouly adjusted by locking them in place with the locking tabs on the beam bender

RING PAIRS	ROTATION DIRECTION OF BOTH TABS	MOVEMENT OF RED AND BLUE BEAMS
4 POLE	OPPOSITE	B R OR B R
	SAME	B R OR B R
6 POLE	OPPOSITE	B R OR B R
	SAME	B R OR B R

UP/DOWN ROCKING OF THE YOKE CAUSES OPPOSITE ROTATION OF RED AND BLUE RASTERS



LEFT/RIGHT ROCKING OF THE YOKE CAUSES OPPOSITE SIZE CHANGE OF THE RED AND BLUE RASTERS



12. While watching the 6 o'clock positions on the screen, rock the front of the yoke in a vertical (up/down) direction to converge the red and blue vertical lines. (Fig upper left)
13. Temporarily place a rubber wedge at the 12 o'clock position to hold the vertical position or the yoke.
14. Check the 3 o'clock and 9 o'clock areas to confirm that the red and blue horizontal lines are converged.
    If the lines are not converged, slightly offset the vertical tilt of the yoke (move the rubber wedge if necessary) to equally balance the convergence error of the horizontal lines at 3 o'clock and 9 o'clock and the vertical lines at 6 o'clock and 12 o'clock.
15. Place a 1.5 inch piece of glass tape over the rubber foot at the rear of the 12 o'clock wedge.
16. While watching the 6 o'clock and 12 o'clock areas of the screen, rock the front of the yoke in the horizontal (left to right) motion to converge the red and blue horizontal lines. (Fig. upper right)
17. Temporarily place a rubber wedge at the 5 o'clock and 7 o'clock positions to hold the horizontal position of the yoke.
18. Check the 3 o'clock and 9 o'clock areas to confirm that the red and blue vertical lines are converged. If the lines are not converged, slightly offset the horizontal tilt of the yoke (move the temporary rubber wedges if necessary) to equally balance the convergence error of the horizontal lines at 6 o'clock and 12 o'clock and the vertical lines at 3 o'clock and 9 o'clock.
19. Using a round magnet confirm purity at the center, right and left sides and corners. See Purity Adjustment Procedure.
20. Reconfirm convergence and apply a 1.5 inch piece of glass tape over the rubber foot at the rear of the 5 o'clock and the 7 o'clock wedges.

ADJUSTMENT INSTRUCTIONS

■ Alignment procedures

1. It is safe to adjust after using insulating transformer between the power supply line and chassis input to prevent the risk of electric shock and protect the instrument.
2. Never disconnect leads while the TV receiver is on.
3. Don't short any portion of circuits while power is on.
4. The adjustment must be done by the correct appliances. But this is changeable in view of productivity.
5. Unless other-wise noted, set the line voltage to 220V± 10%, 50/60Hz.

■ Test Equipment required

1. Color signal generator : PAL/SECAM
2. Digital multi-meter
3. White balance meter

● RF AGC adjustment (at the MAIN PCB of VCR)

Test point	: TP AGC (W799)
Adjust	: VR771

The RF AGC control (VR771) was aligned at the time of manufacture for optimum preformance over a wide range conditions. Readjust of VR771 should not be necessary unless unusual local conditions exist, such as;

1) Channel interference in a CATV system.
2) Picture bending and / or color beats, which are unusually due to excessive RF signal input when the receiver is too close to a transmitting tower or when the receiver is connected to an antenna distribution system where the RF signal has been amplified.
   In this case the input signal should be attenuated (with a pad or filter) to a satisfactory level.
3) Picture noise caused by "broadcast noise" or weak signal.
   If the broadcast is "clean" and the RF signal is at least 1mV (60dBu) the picture will be noise free in any area.

Adjusting the VR771(RF AGC) control to one end of rotation will usually caused a relatively poor signal to noise ratio;
Adjusting to the other end of rotation will usually cause a degradation of overload capabilities resulting in color beats or adjacent channel reference.
For best results, adjust the VR771 control while performing on all other local channels, or the voltage at TP AGC(W799) will be 6.3±0.1VDC.

Note : TP AGC (W799) VR771 are located inside VCR unit.
Refer to below fig 1.

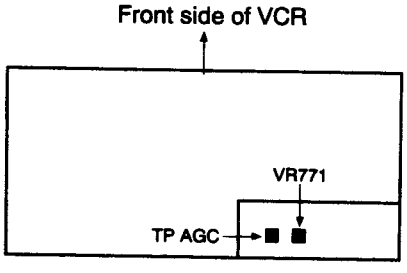


Fig. 1

● Focus adjustment

Test point	: Observe Display
Adjust	: Focus control of FBT

1) Set color to minimum, brightness and contrast to maximum.
2) Tune the TV set to an inactive channel station.
3) Adjust the focus control for best overall focus.

● Screen & white balance (color temperature) adjustment

Note: The color bias controls (VR901, VR902, VR903) affect the low light (dark) area of the picture while the color drive controls (VR904, VR905) affect the high light (white) areas.

1) Tune the standard white signal, set the color and brightness, contrast to the normal position.
2) Turn the screen VR counter-clockwise and set it to the minimum position.
3) Set the VR901, 902, 903, 904, 905 on the CPT Board to the mechanical center position.
4) Press CUTOFF button on service remote controller. (That is to obtain a horizontal line)
5) Turn the screen VR clockwise slowly to obtain a first horizontal line on screen.
6) Adjust Two Bias VR (two of three, VR901, 902, 903) so that the horizontal line on screen may become white.
7) Turn the screen VR adjust horizontal line on screen just disappear point.
8) Press again CUTOFF button on service remote controller, then TV screen returns normal status.
9) Receive the adjust pattern white and black signal.
10) Adjust VR904 (RED Drive) and VR905 (Blue Drive) high light on screen may become white.
11) By using color analyzer (white balance checker), adjust X position equals to 295±2 and Y position equals to 305±2, it means color temperature is 8000°±800°K at low light (4.5ft.L) at high light (over 45ft.L).
12) Adjust Contrast and Birghtness and then conform whether you have a considerable adjustment in a high and low light screen, otherwise, re-adjust above item 4)-11).

● Vertical size adjustment.

1) Tune the TV set to receive a digital test pattern.
2) Adjust VR301 so that the circle of a digital pattern may be located within the effective screen of CPT.

■ Vertical/Horizontal/SECAM Adjustment

NOTE: These adjustments are already aligned at the time of manufacture for optimum performance. Readjust of them should not be necessary unless IC503(EEPROM) is defective. Because all the information of these adjustment are memorized in that IC.

Adjustment procedures

1) Tune the TV set to receive a digital pattern unless otherwise noted.
2) Press SVC button on service remote controller then you can find On Screen Display.
   Refer to the following fig. 2.
3) press PR+ or PR- button for desirous function adjustment.
4) press VOL+ or VOL- button for correct picture.

LINE SVC		PR1
H-CNT	13	
V-CNT	04	
PNAMP	00	
S. BEL	04	
S. R-Y	08	
S. B-Y	14	
S. AMP	03	
X-TAL	0	
AFC	350	

Fig. 2

● Horizontal center adjustment

Adjust so that the horizontal center line of digital pattern is in accord with gemetric horizontal center of the CPT.

● Vertical center adjustment

Adjust so that the vertical center line of digital pattern is in accord with geometric center of the CPT.

● SECAM BELL filter adjustment

1) Tune the TV set to receive a SECAM digital pattern.
2) Adjust so that the color on the 3.8MHz pattern is minimized.

● SECAM B-Y/R-Y adjustment

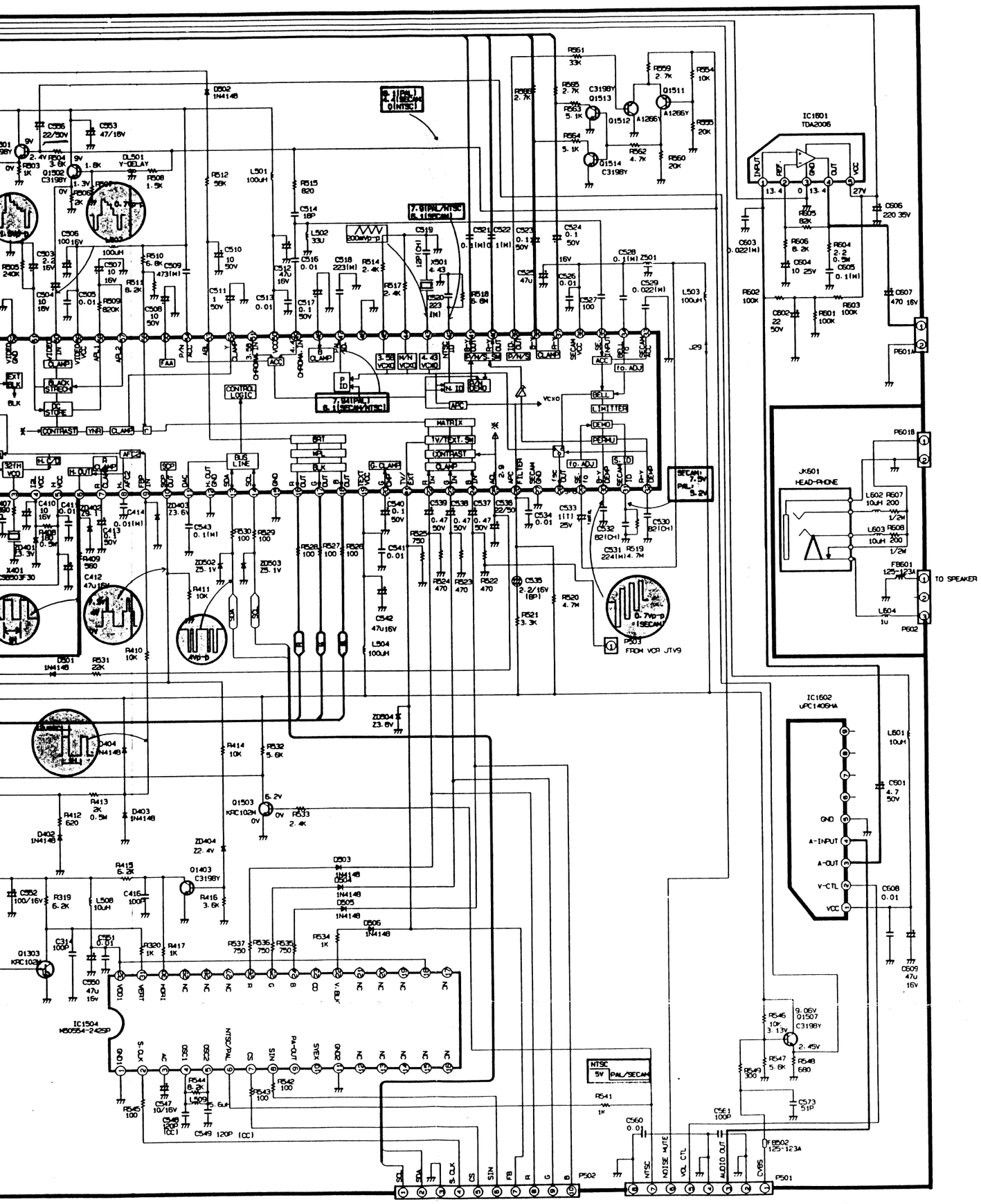
1) Tune the TV set to receive a SECAM digital pattern.
2) Adjust so that the background color is equal to the PAL background color.

● SECAM AMP adjustment

1) Tune the TV set to receive a SECAM digital pattern.
2) Adjust so that the level of SECAM color is equal to the level of PAL color.

MV-55A SCHEMATIC DIAGRAM (PAL/SEC

L/SECAM/NTSC4.43)



NOTICE

Since this is a basic schematic diagram,
The value of components and printed circuit board pattern
connection are subject to change for improvement.

The components marked ⚠ conform to VDE or IEC guidelines and are essential for safe operation of the set. while those marked ⚠ are required for correct operation. Use specified parts only when replacing.

VALUE OF RESISTER. CAPACITOR AND INDUCTOR

1. Resistances are shown in ohm. K = 1.000 M = 1.000.000 .
2. Unless otherwise noted in schematic. all capacitor values less than 1 are expresses in mfd and the values more than 1 in pF
3. Unless otherwise noted in schematic. all coil values more than 1 are expressed in uH. and the values less than 1 in H.

OBSERVATION OF VOLTAGES AND WAVEFORMS

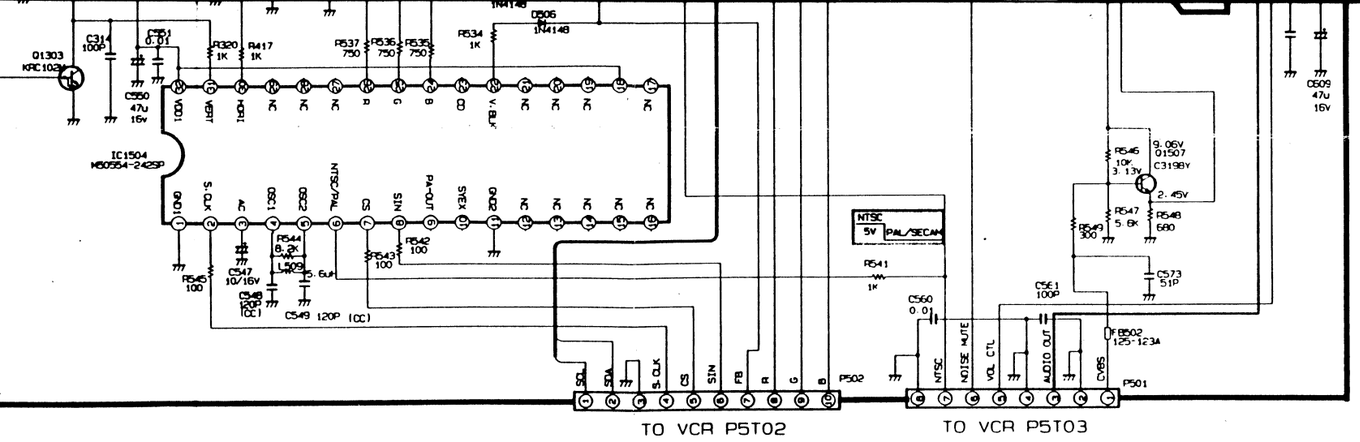
1. Voltages read with VTVM from point shown to chassis ground. line voltages 220 Volts. colour bar signal
2. Voltages reading may very ±20%.
3. The schematic shown is representative only.
4. All waveforms are taken using a wide band oscilloscope and a low capacity probe.
5. Check FINE TUNING. AGC. BRIGHTNESS. CONTRAST and COLOUR controls for best picture. make sure that CONTRAST and COLOUR controls are in mid position and BRIGHTNESS controls is almost in maximum position.
6. Waveforms are takrn using a standard colour bar signal.

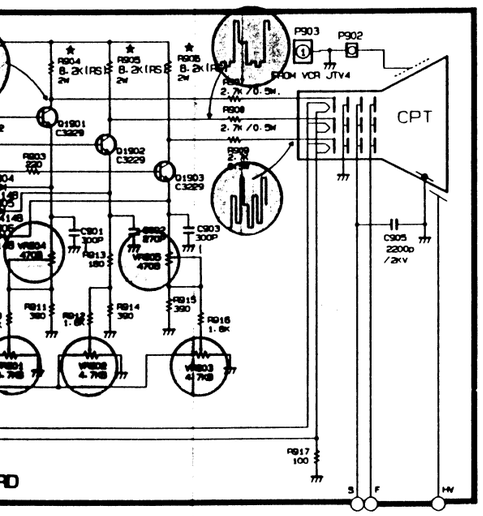
★TABLE OF INCH CONVERSION

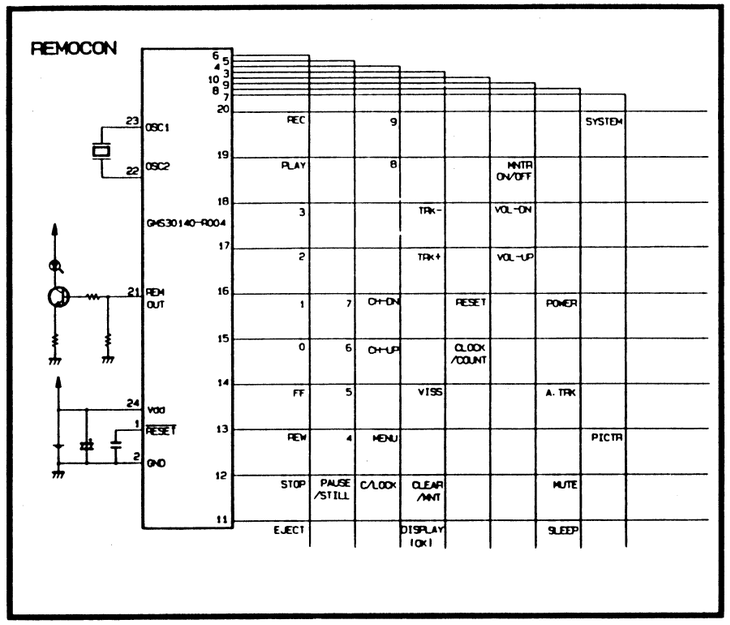
NO	CIRCUIT NO	INCH		REMARK
		14"	20"	
1	R702	75K	56K	RESISTOR. FIX 1/2W
2	R703	75K	56K	RESISTOR. FIX 1/2W
3	R304	8.2K	10K	RESISTOR. FIX 2W
4	R305	8.2K	10K	RESISTOR. FIX 2W
5	R306	8.2K	10K	RESISTOR. FIX 2W
6	FR703	1.6	1.0	RESISTOR. FUS 2W
7	C308	0.47	0.1	CAPACITOR. ELEC 50V
8	C402	772	862	CAPACITOR. MPP 1.6KV
9	C419	624	364	CAPACITOR. MPP 200V
10	L402	-L01W	-L02C	COIL. LINEARITY(150-)
11	T701	-207A	-207D	FBT(154-)
12	P501A/B	-D10D	-D10E	CONNECTOR ASSY(10P)
13	P601A/B	-B02B	-B02C	CONNECTOR ASSY(2P)
14		-100F	-226D	CPT SOCKET(381-)
15		-P68A	-P68B	PCB(111-)
16				
17				
18				

● TABLE OF SYSTEM CONNERSION

NO	CIRCUIT NO	SYSTEM		REMARK
		KL&KB MODEL	KI&KY MODEL	
1	R519	4.7M	-	RESISTOR. FIX 1/6W
2	C525	47	-	CAPACITOR. ELEC 16V
3	C526	10000P	-	CAPACITOR. TUBULAR 16V







15		-P68A	-P68B	PCB(111-)
16				
17				
18				

TABLE OF SYSTEM CONNERSION

NO	CIRCUIT NO	SYSTEM		REMARK
		KL&KB MODEL	KI&KY MODEL	
1	R519	4.7M	-	RESISTOR, FIX 1/6W
2	C525	47	-	CAPACITOR, ELEC 16V
3	C526	10000P	-	CAPACITOR, TUBULAR 16V
4	C527	100P	-	CAPACITOR, TUBULAR 50V
5	C528	0.1	-	CAPACITOR, POLY 50V
6	C529	0.022	-	CAPACITOR, POLY 100V
7	C530	82	-	CAPACITOR, CERAM 50V
8	C531	0.22	-	CAPACITOR, MYLAR 100V
9	C532	82	-	CAPACITOR, CERAM 50V
10	C533	1	-	CAPACITOR, TANTAL 25V
11	L503	100u	-	INDUCTOR, AXIAL
12	Z501	103	-	FILTER, EMI 100V
13	J29	TIN WIRE	-	WIRE, TIN HDC 0.6H
14	P503	1P	-	PIN PLUG 1P
15	P903	1P	-	PIN PLUG 1P

ADJUSTMENT

SOUND

HORIZONTAL

VERTICAL

WAVEFORM

CHROMA/CVBS

P/N:484-922A

DATE:01.16.1996

NO

Check/Replace T701

NO

Check/Replace ZD502, ZD503 and VCR circuit

4. NO COLOR

Check the voltage at the pin50 of IC1501 about 9V — NO → Check /Replace FR702, D702, IC1701, T701, IC1501

YES

Check whether it is Auto system mode or not — others → Chage the system mode into Auto mode

Auto System

Check the voltage at the pin31, 39, 42, 47 of IC1501 — NO → Check color B.P.F (external of pin49, 51 at IC1501)

YES

Check the waveform of X501, X502 — NO → Check/Replace X501, X502, IC1501

YES

Check the waveform at the pin40, 41 of IC1501 — NO → Check/Replace IC1501

YES

Check the SCP pulse at the pin5 of IC1502 — NO → Check the SCP pulse at the pin10 of IC1501

YES

Check the waveform at the pin37, 38 of IC1501 — NO → Check/Replace IC1502

YES

Check/Replace IC1501

5. NO SOUND

Check the voltage at the pin5 of IC1601 about 25V — NO → Check/Replace FR854, D855, IC1601

YES

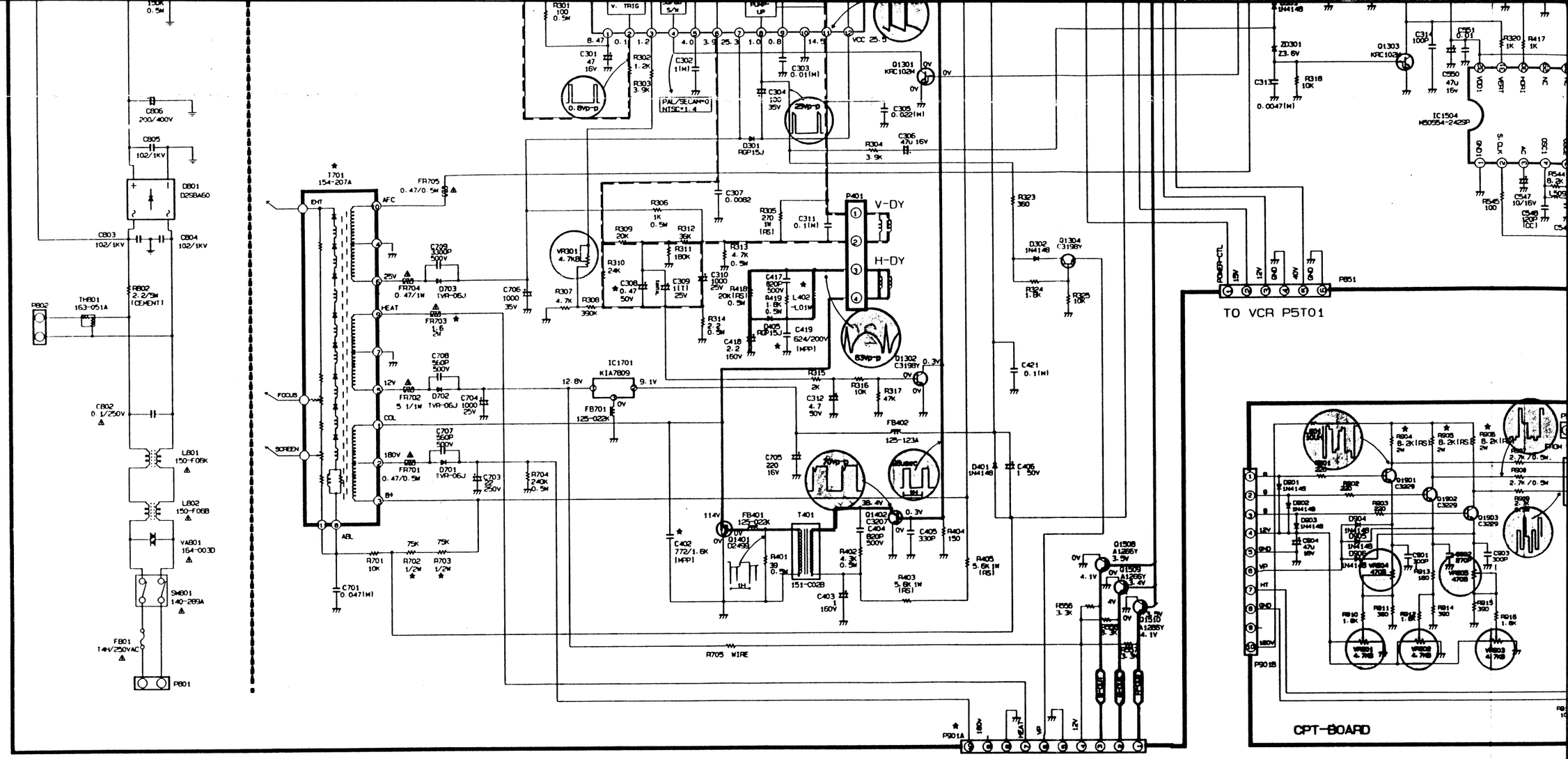
Does the sound signal appear at the pin3 of P501 — NO → Check VCR circuit

YES

Does the sound signal appear at the pin4 of IC601 — NO → Check/Replace IC1601, external components of IC1601

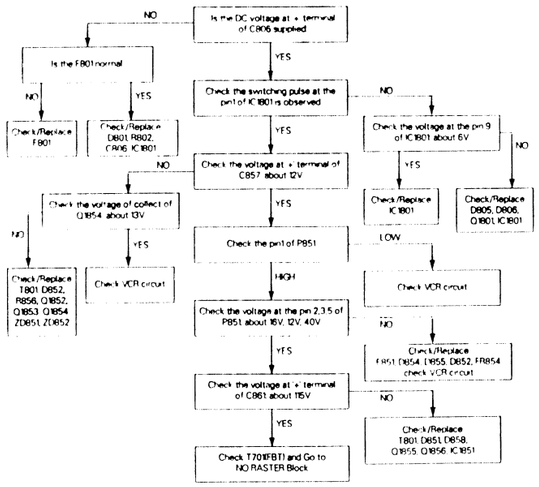
YES

Check/Replace speaker, speaker connector

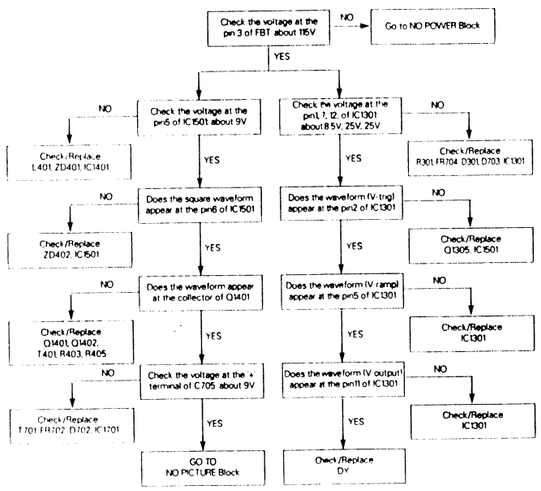


• TROUBLESHOOTING CHARTS

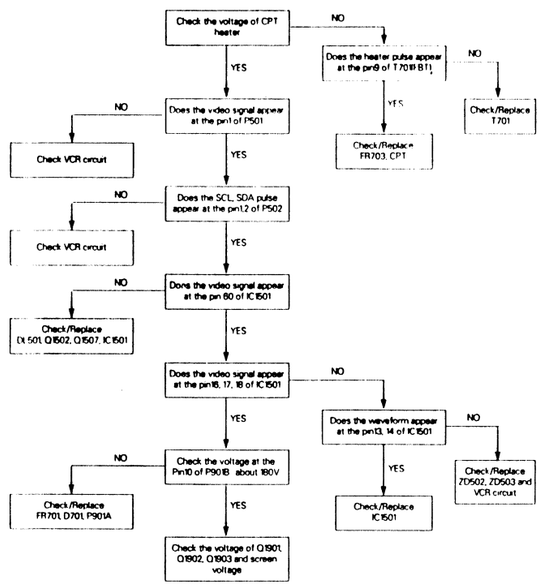
1. NO POWER


Is the DC voltage at + terminal of C806 supplied
NO
YES
Is the FB01 normal
Check/Replace FB01
Check/Replace D801, R802, CR06, IC801
Check the switching pulse at the pin1 of IC1801 is observed
Check the voltage at the pin 9 of IC1801 about 6V
Check/Replace IC1801
Check/Replace D805, D806, Q1801, IC1801
Check the voltage at + terminal of C857 about 12V
Check the voltage of collect of Q1854 about 13V
Check/Replace T801, D852, R856, Q1852, Q1853, Q1854, ZD851, ZD852
Check VCR circuit
Check the pin1 of P851
LOW
HIGH
Check VCR circuit
Check the voltage at the pin 2,3,5 of P851 about 16V, 12V, 40V
Check/Replace FR51, D854, D855, D852, FR854 check VCR circuit
Check the voltage at + terminal of C861 about 115V
Check/Replace T801, D851, D858, Q1855, Q1856, IC1851
Check T701(FBT) and Go to NO RASTER Block

2. NO RASTER

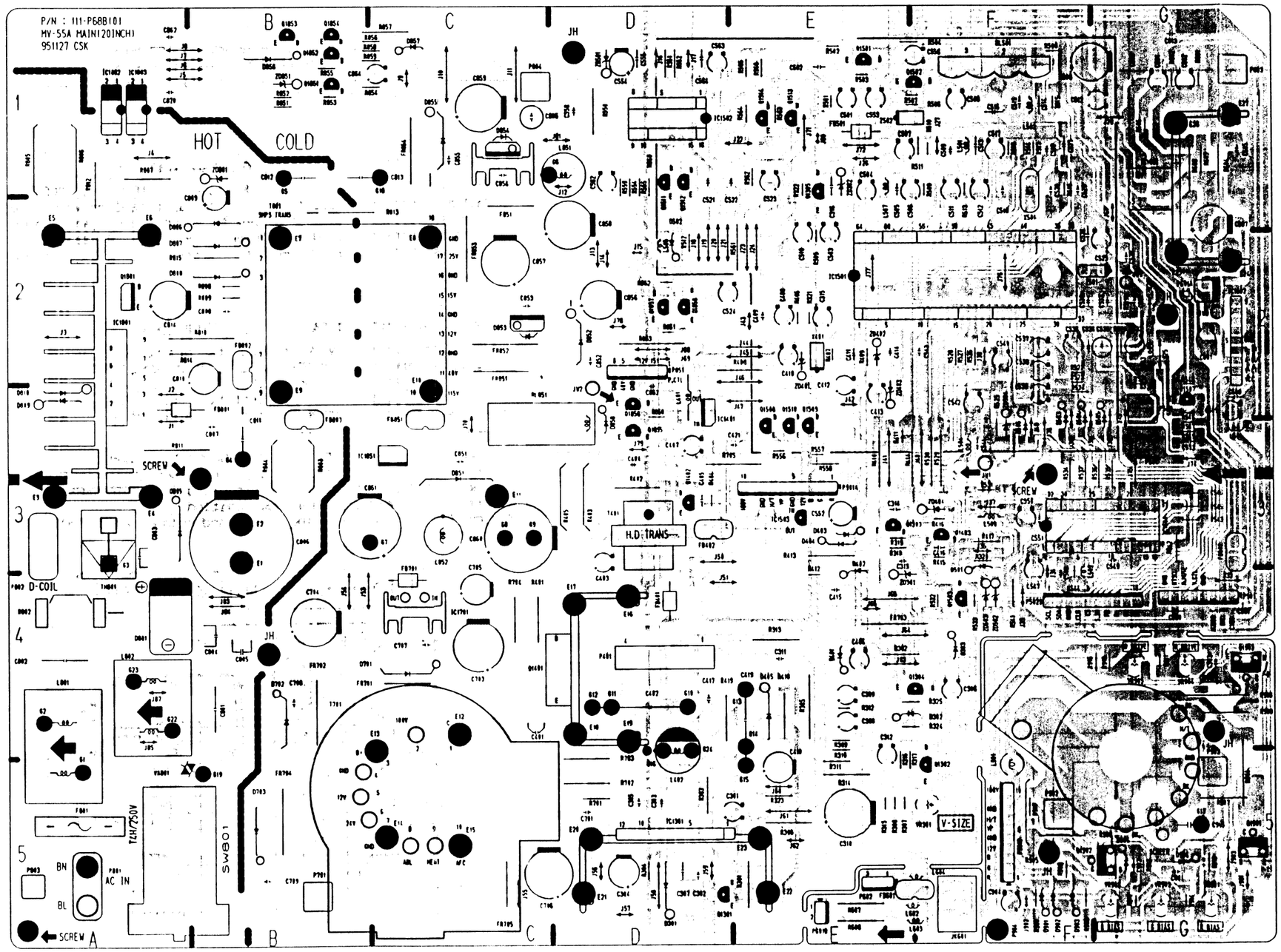

Check the voltage at the pin 3 of FBT about 115V
Go to NO POWER Block
Check the voltage at the pin6 of IC1501 about 9V
Check the voltage at the pin1, 7, 12 of IC1301 about 8.5V, 25V, 25V
Check/Replace L401, ZD401, IC1401
Check/Replace R301, FR704, D301, D703, IC1301
Does the square waveform appear at the pin6 of IC1501
Does the waveform (V-trig) appear at the pin2 of IC1301
Check/Replace ZD402, IC1501
Check/Replace Q1305, IC1501
Does the waveform appear at the collector of Q1401
Does the waveform (V ramp) appear at the pin5 of IC1301
Check/Replace Q1401, Q1402, T401, R403, R405
Check/Replace IC1301
Check the voltage at the + terminal of C705 about 9V
Does the waveform (V output) appear at the pin11 of IC1301
Check/Replace T701, FR702, D702, IC1701
Check/Replace IC1301
GO TO NO PICTURE Block
Check/Replace DY

3. NO PICTURE

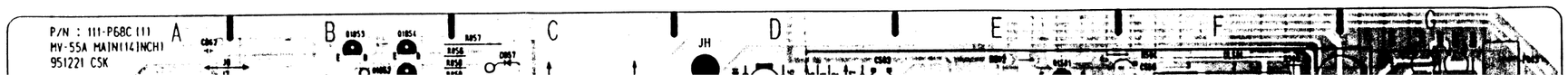

Check the voltage of CPT heater
Does the heater pulse appear at the pin9 of T701(FBT)
Check/Replace T701
Check/Replace FR703, CPT
Does the video signal appear at the pin1 of P501
Check VCR circuit
Does the SCL, SDA pulse appear at the pin1,2 of P502
Check VCR circuit
Does the video signal appear at the pin 60 of IC1501
Check/Replace D1501, Q1502, Q1507, IC1501
Does the video signal appear at the pin16, 17, 18 of IC1501
Does the waveform appear at the pin13, 14 of IC1501
Check/Replace ZD502, ZD503 and VCR circuit
Check/Replace IC1501
Check the voltage at the Pin10 of P901B about 180V
Check/Replace FR701, D701, P901A
Check the voltage of Q1901, Q1902, Q1903 and screen voltage

PRINTED CIRCUIT BOARD

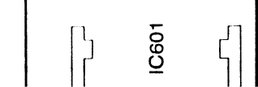
1. 20" Main P.C.Board (Component Side)



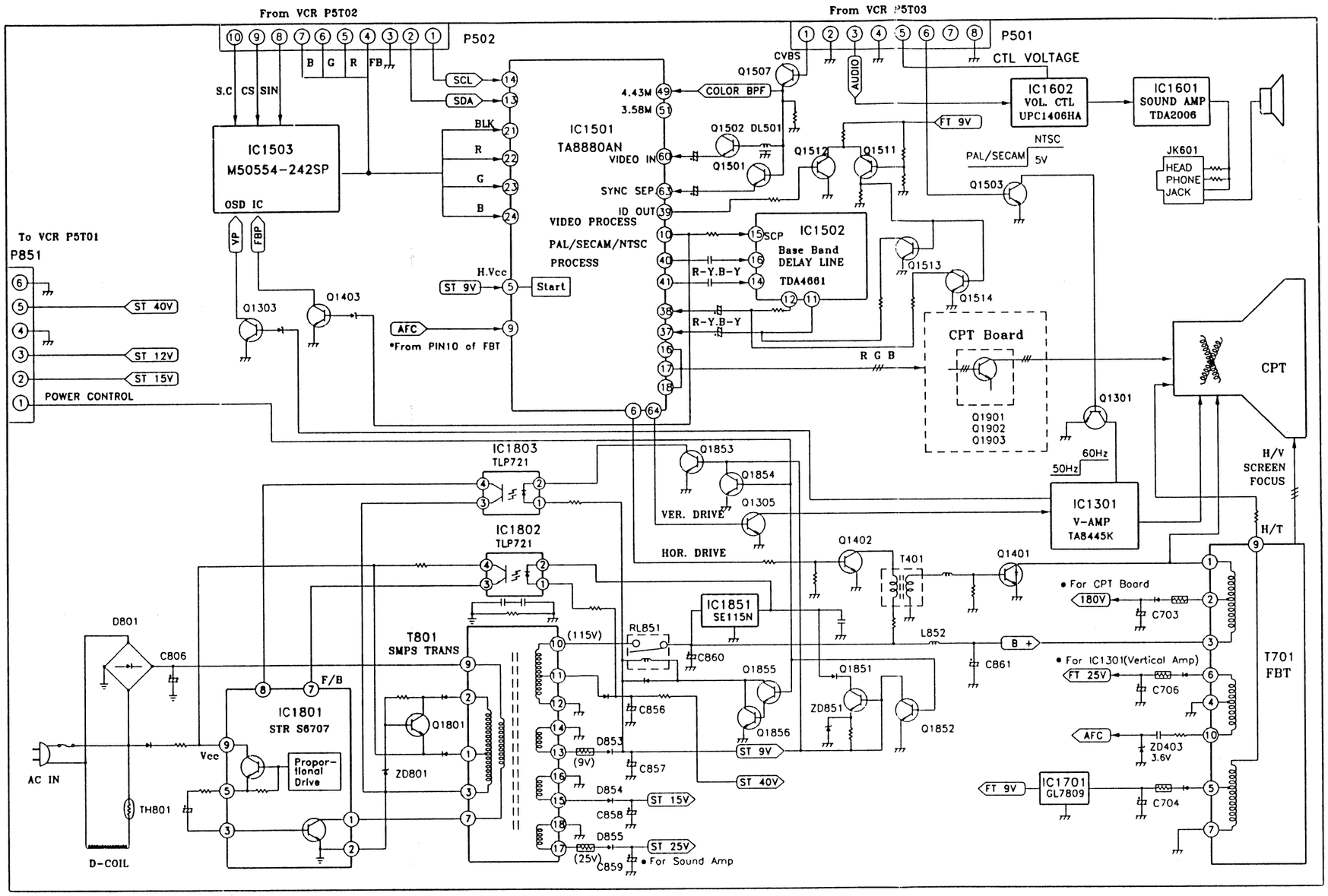
2. 14" Main P.C.Board (Component Side)



ALIGN



BLOCK DIAGRAM

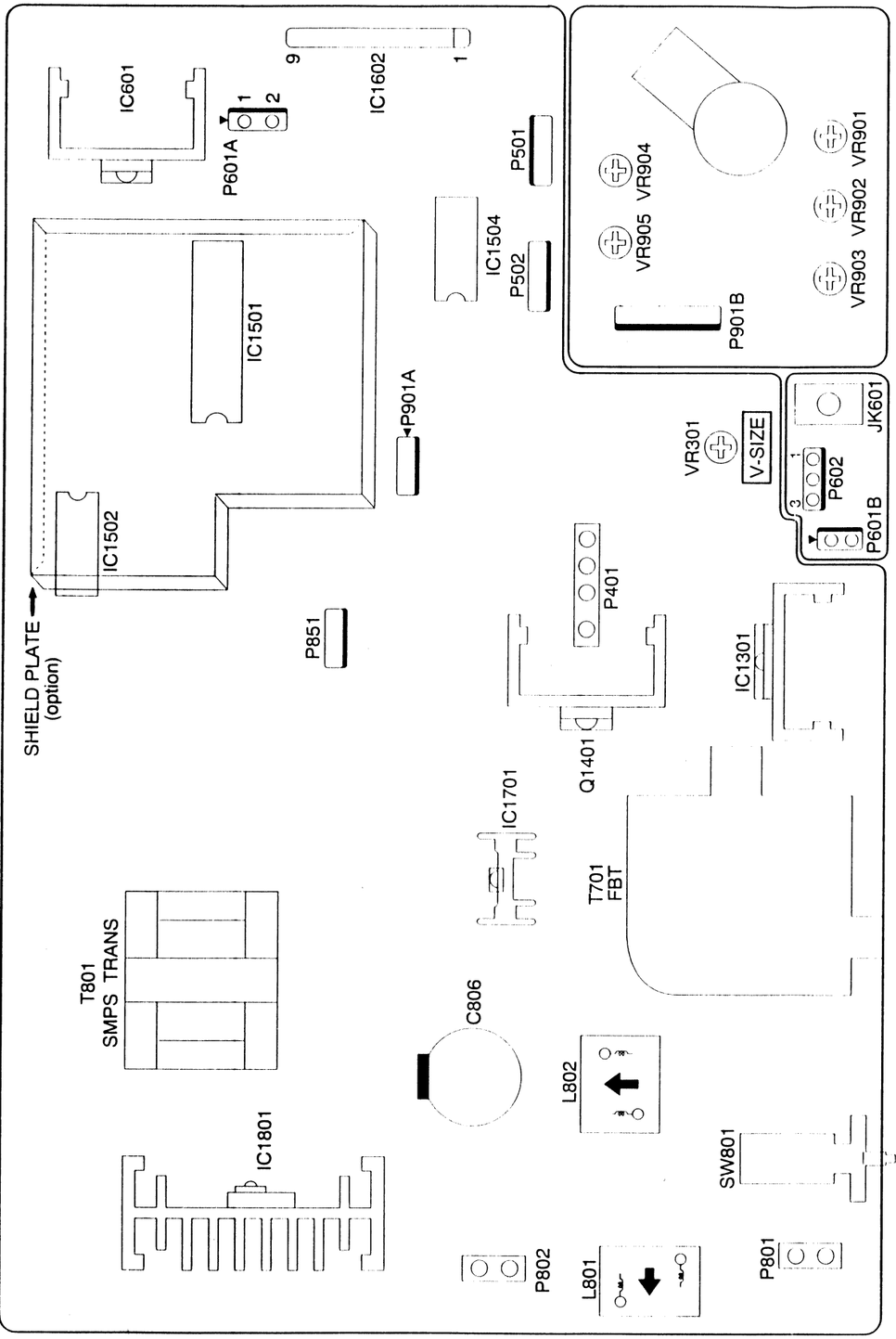


ALIGNMENT/TEST POINT LOCATION GUIDE

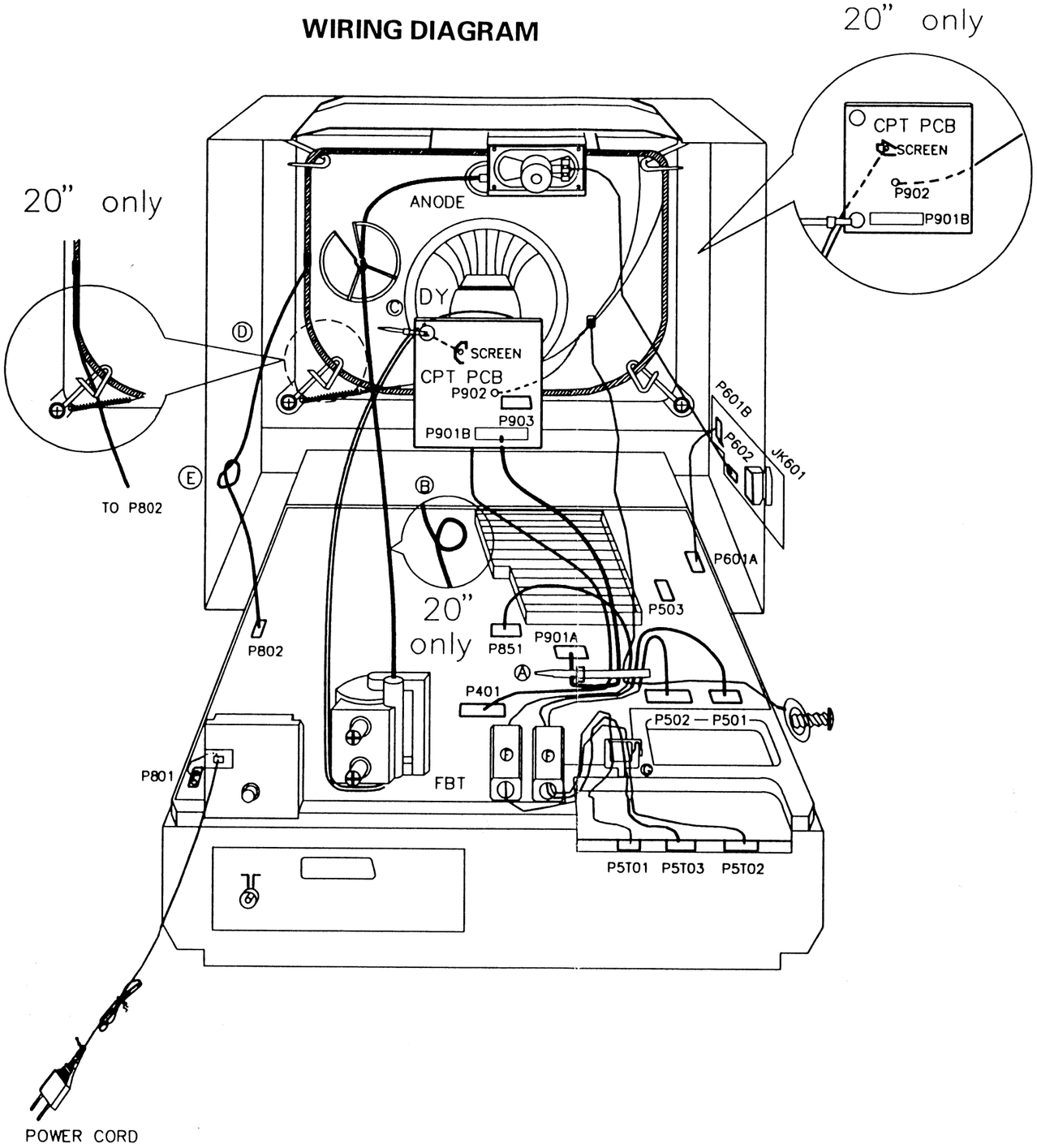
WIRING DIAGRAM

20" only

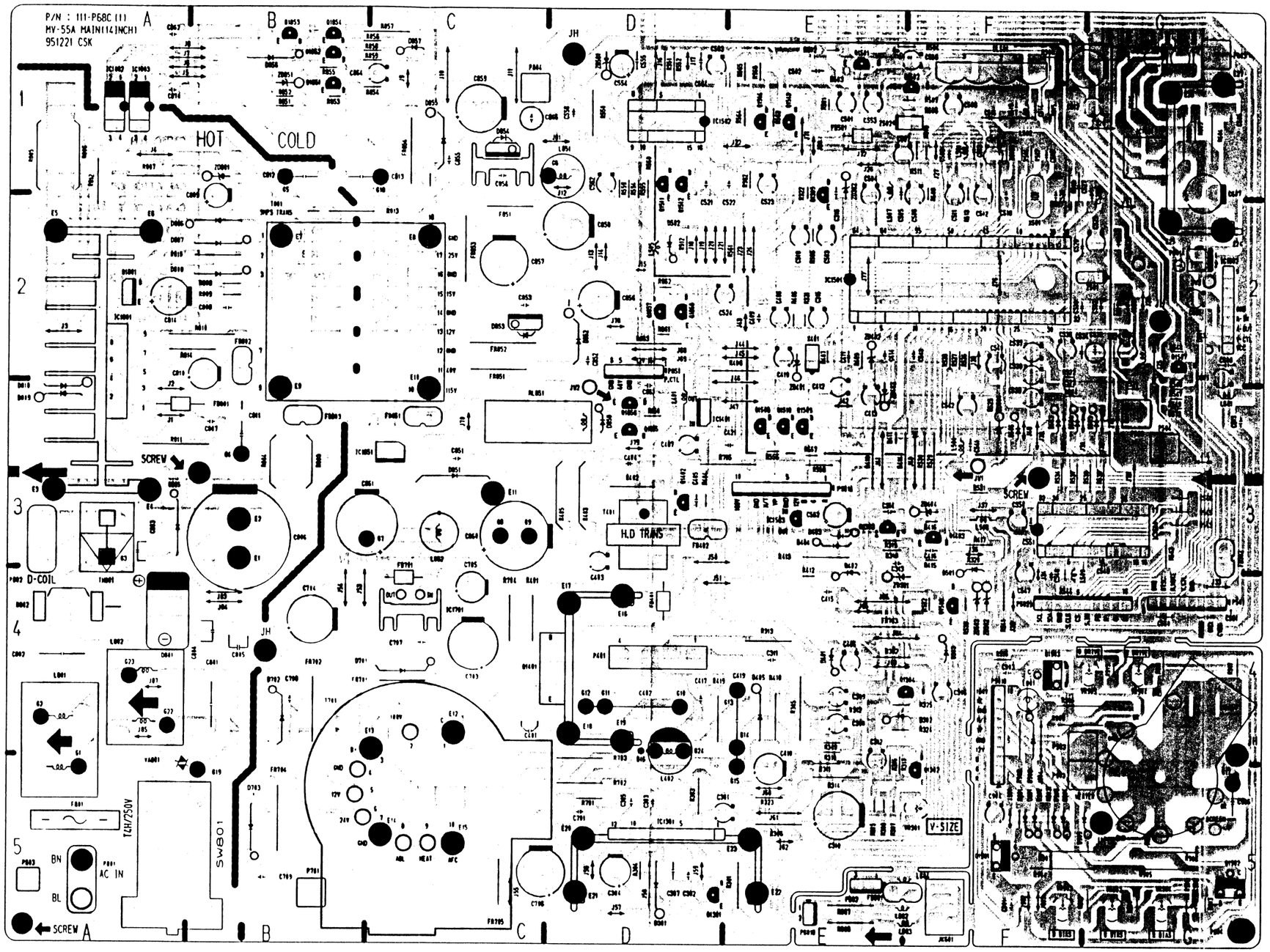
ALIGNMENT/TEST POINT LOCATION GUIDE

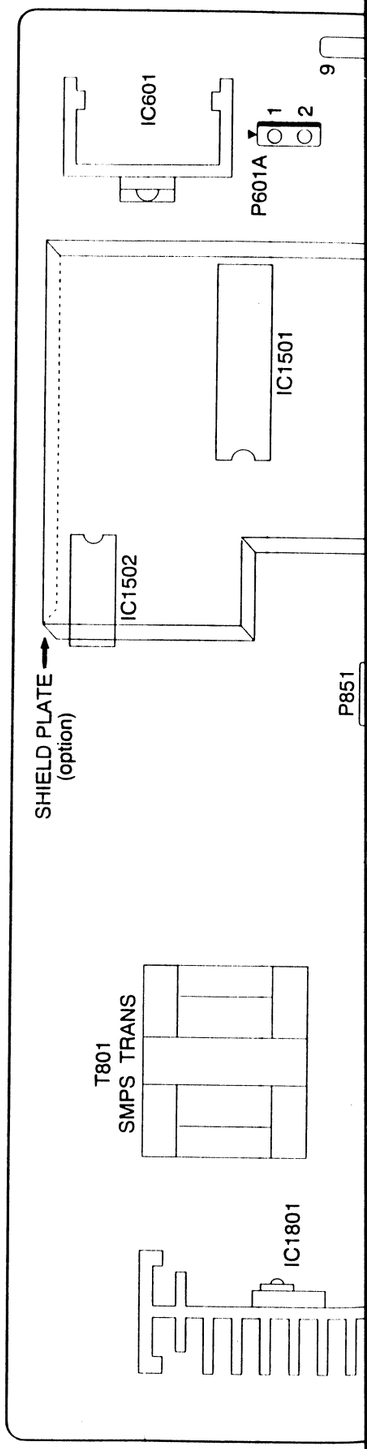


WIRING DIAGRAM

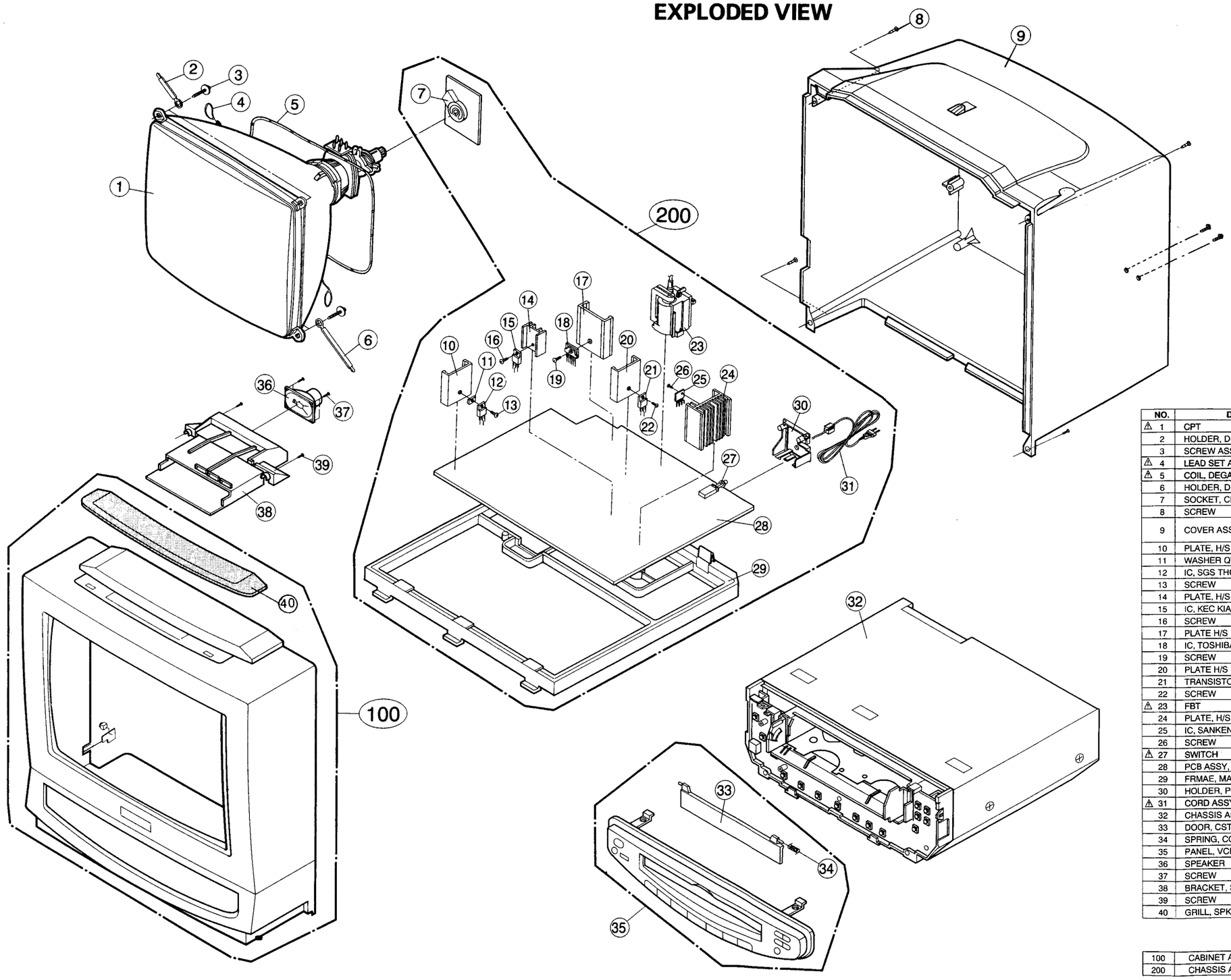


2. 14" Main P.C.Board (Component Side)





EXPLODED VIEW



The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

NO.	DESCRIPTION	PART NO(14")	PART NO(20")
⚠ 1	CPT	2055-V0744D	2055-V1221B
2	HOLDER, D-COIL	341-721A	
3	SCREW ASSY, HEXAGON HEAD	332-057B	
⚠ 4	LEAD SET ASSY, CPT EARTH	170-A01A	170-799H
⚠ 5	COIL, DEGAUSSING	150-D02B	
6	HOLDER, D-COIL	341-721B	
7	SOCKET, CPT	381-100F	381-226D
8	SCREW	1PPF0403116	
9	COVER ASSY, BACK	303-J78B(FOR LGEES) 303-J78H(FOR LGEDG)	303-J93B
10	PLATE, H/S	408-006H	
11	WASHER QW3	334-036A	
12	IC, SGS THOMSON	0ISG200600A	
13	SCREW	1BPF0302816	
14	PLATE, H/S	408-002B	
15	IC, KEC KIA7809PI	0IKE780900E	
16	SCREW	1BPF0302416	
17	PLATE H/S	408-007B	
18	IC, TOSHIBA TA8445K	0ITO844500A	
19	SCREW	1BPF0302416	
20	PLATE H/S	408-006B	
21	TRANSISTOR, KTD2499	0TR249900AA	
22	SCREW	1BPF0302616	
⚠ 23	FBT	154-207A	154-207D
24	PLATE, H/S	408-003E	
25	IC, SANKEN STR-S6707	0ISK670700B	
26	SCREW	1BWF0302816	
⚠ 27	SWITCH	140-289A	
28	PCB ASSY, MAIN	109-818C	109-B13C
29	FRMAE, MAIN	312-399B	
30	HOLDER, POWER CORD	341-856B	
⚠ 31	CORD ASSY, POWER	174-322C	
32	CHASSIS ASSY VT-223P VBNSA	399-011C	
33	DOOR, CST	315-656G	
34	SPRING, COIL	320-161A	
35	PANEL, VCR	313-330J	
36	SPEAKER	120-180F	
37	SCREW	1PWG0302816	
38	BRACKET, SPEAKER	340-580C	340-580B
39	SCREW	1PTF0403116	
40	GRILL, SPKMOLD	NOT IN USE	314-364B

SUB ASSY

100	CABINET ASSY	300-C19M	300-C26N
200	CHASSIS ASSY, MAIN	309-C05C	309-C34C

PART I CABINET & MAIN FRAME PART

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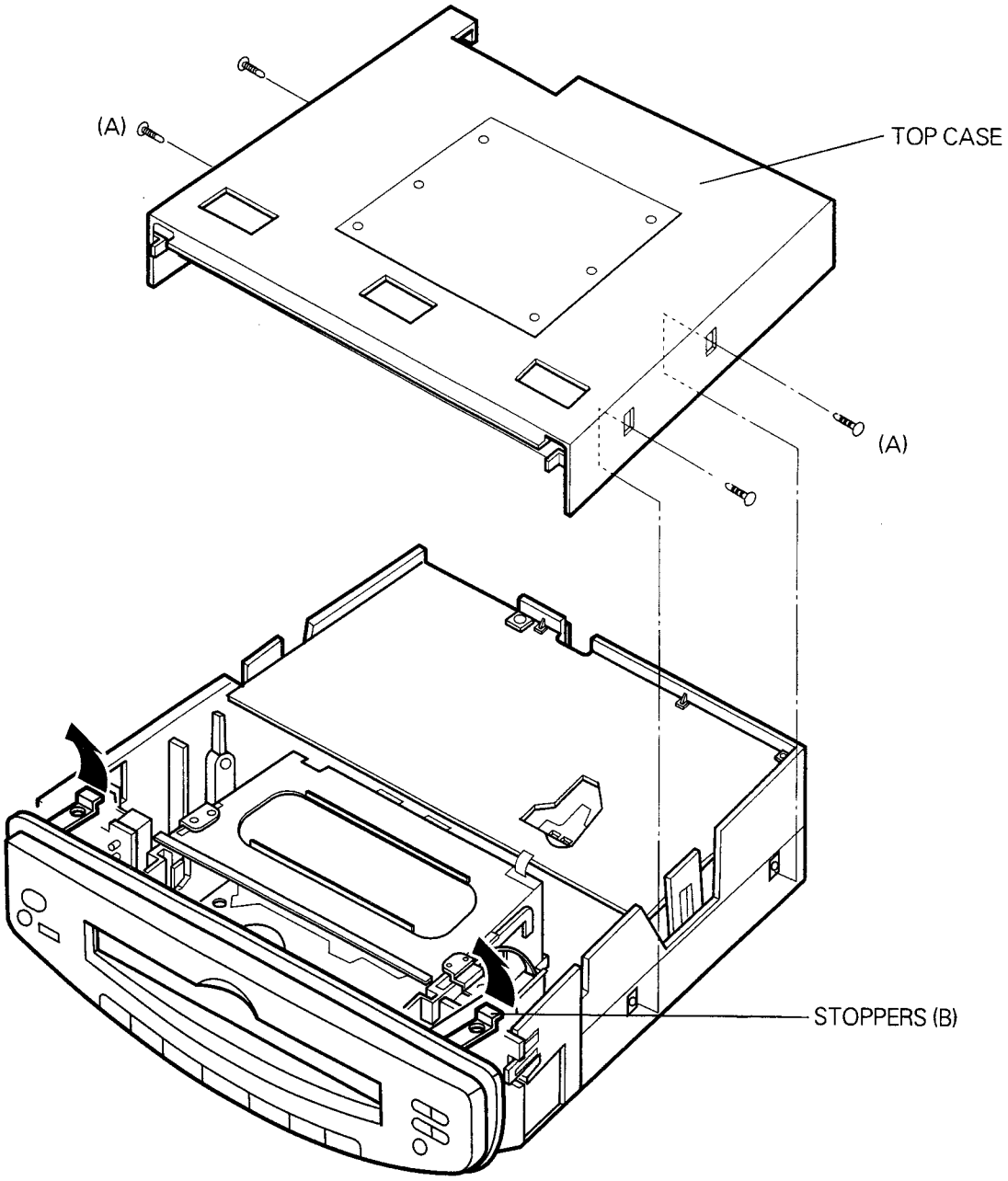
CASING & FRONT PANEL DISASSEMBLY

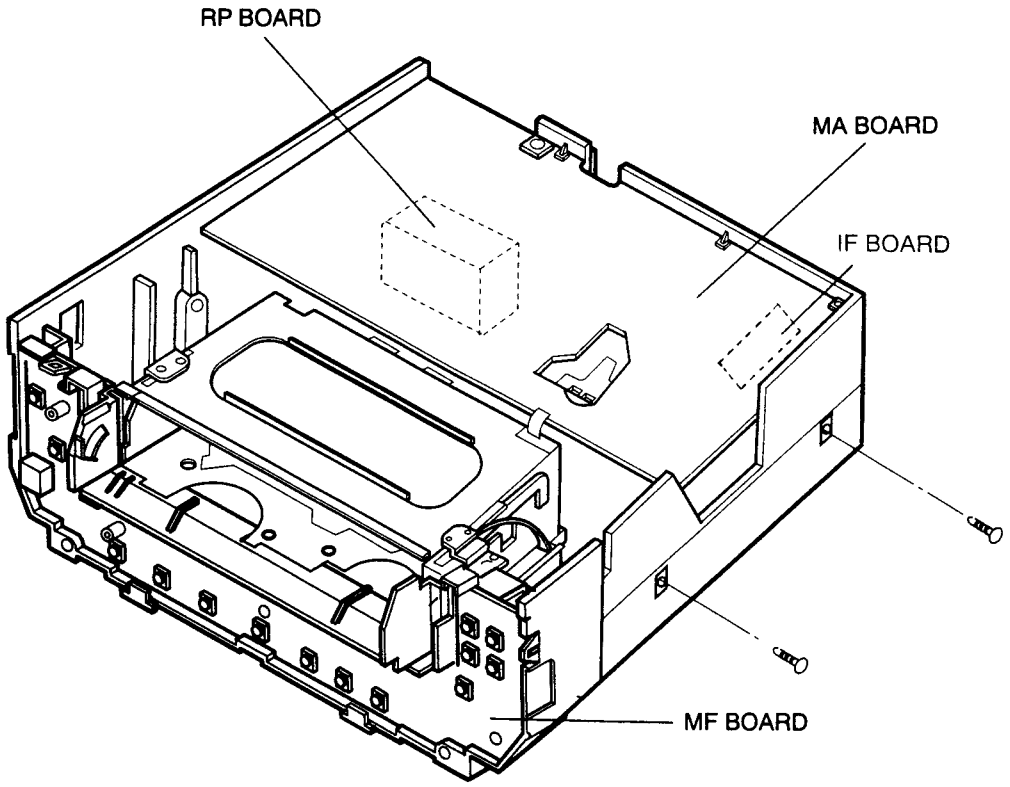
1) Remove the top of case by removing 4 screws (A) on the main frame.
2) Pull the stoppres (B) in the direction of the arrow and then separate front panel from main frame.



CIRCUIT BOARDS DISASSEMBLY

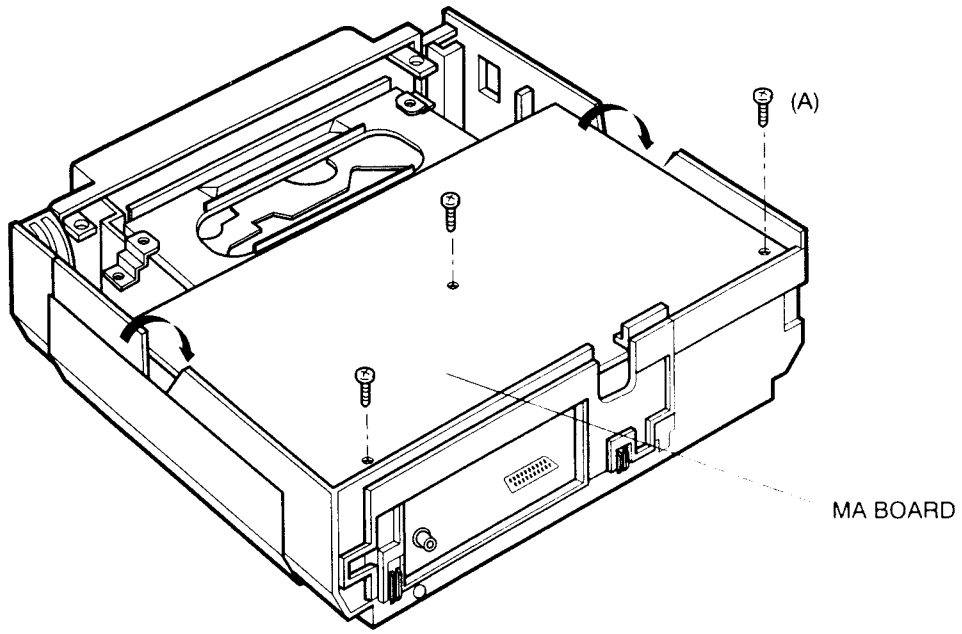
Remove the top case and bottom cover.

1. Circuit Boards Arrangement

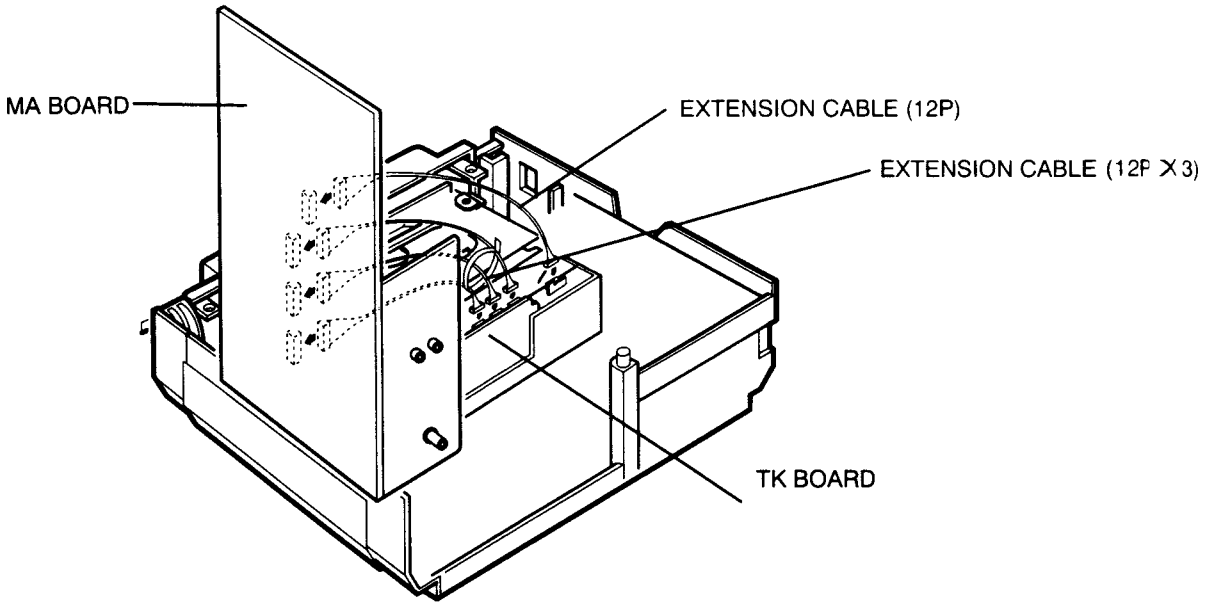


2. MA Board

Remove 3 screws(A) and then separate the main frame and MA board.

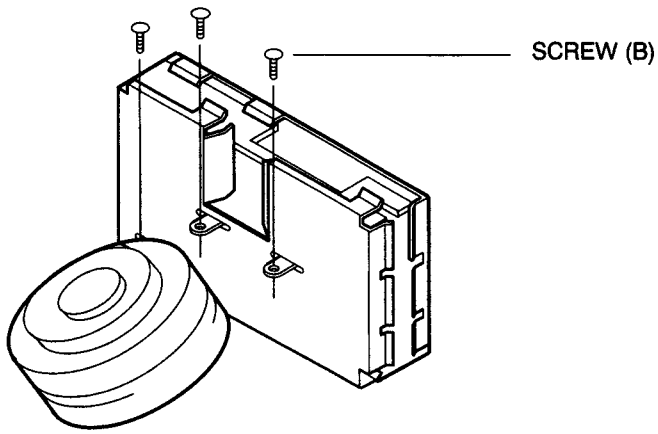


3. Service position



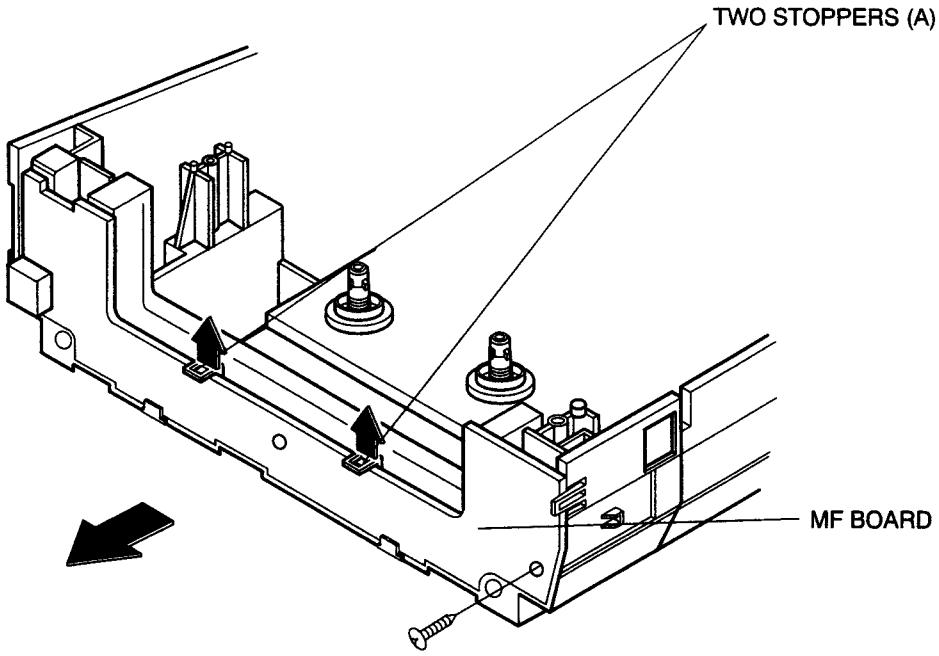
4. RP Board

1) Remove three screws (B) for disassembling the shield case.
2) Remove a connector assembled with the drum assy from P.C.Board.



5. MF Board

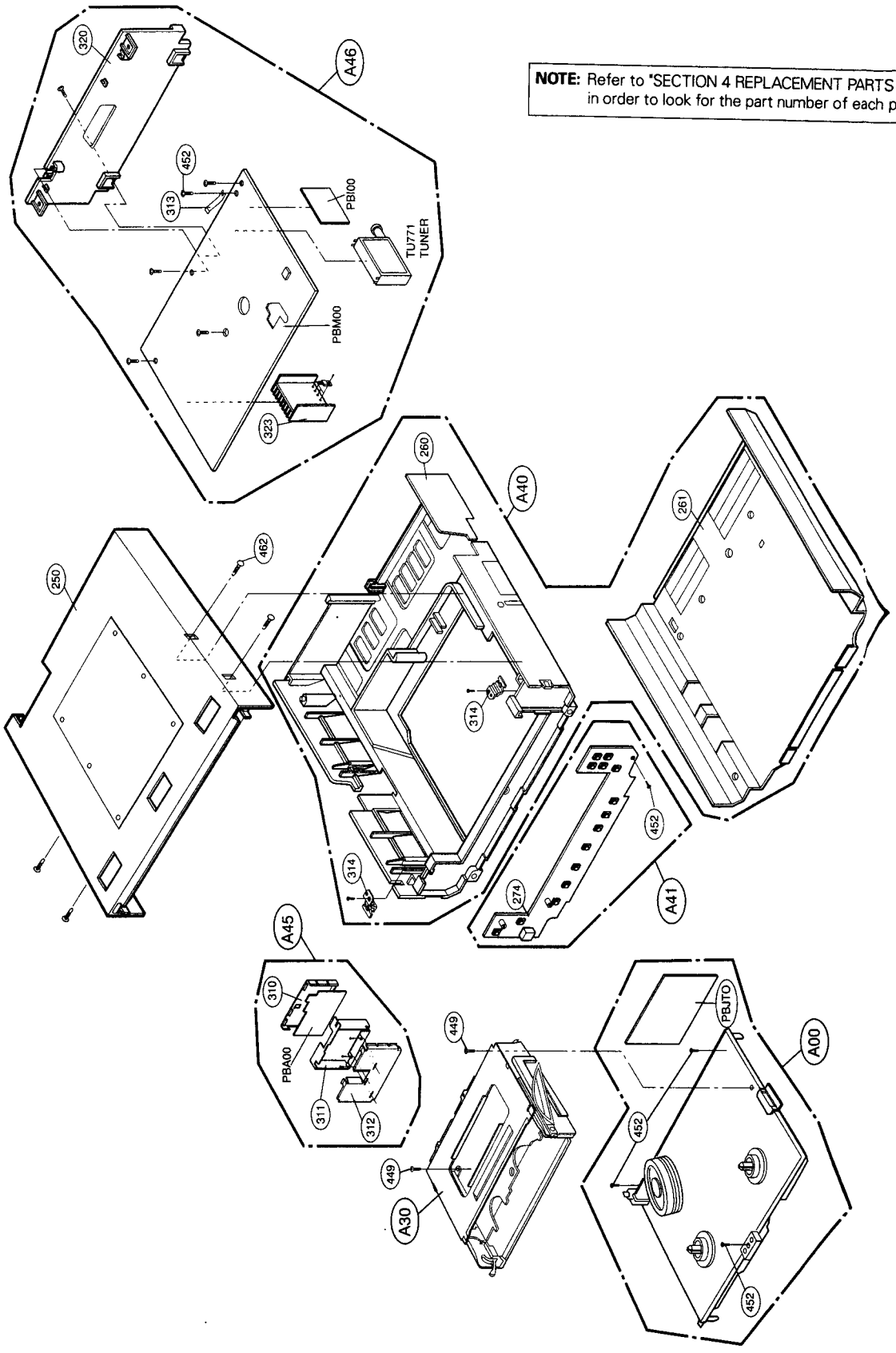
1) Pull the P.C.Board toward you while lifting two stoppers in the direction of the small arrows to disengage, and remove the P.C.Board.
2) Unplug the connector for complete removal.
3) Remove two screws (B) and then separate the main frame and key function board.



1. VCR Main Frame

EXPLODED VIEW

NOTE: Refer to "SECTION 4 REPLACEMENT PARTS LIST" in order to look for the part number of each part.



VCR

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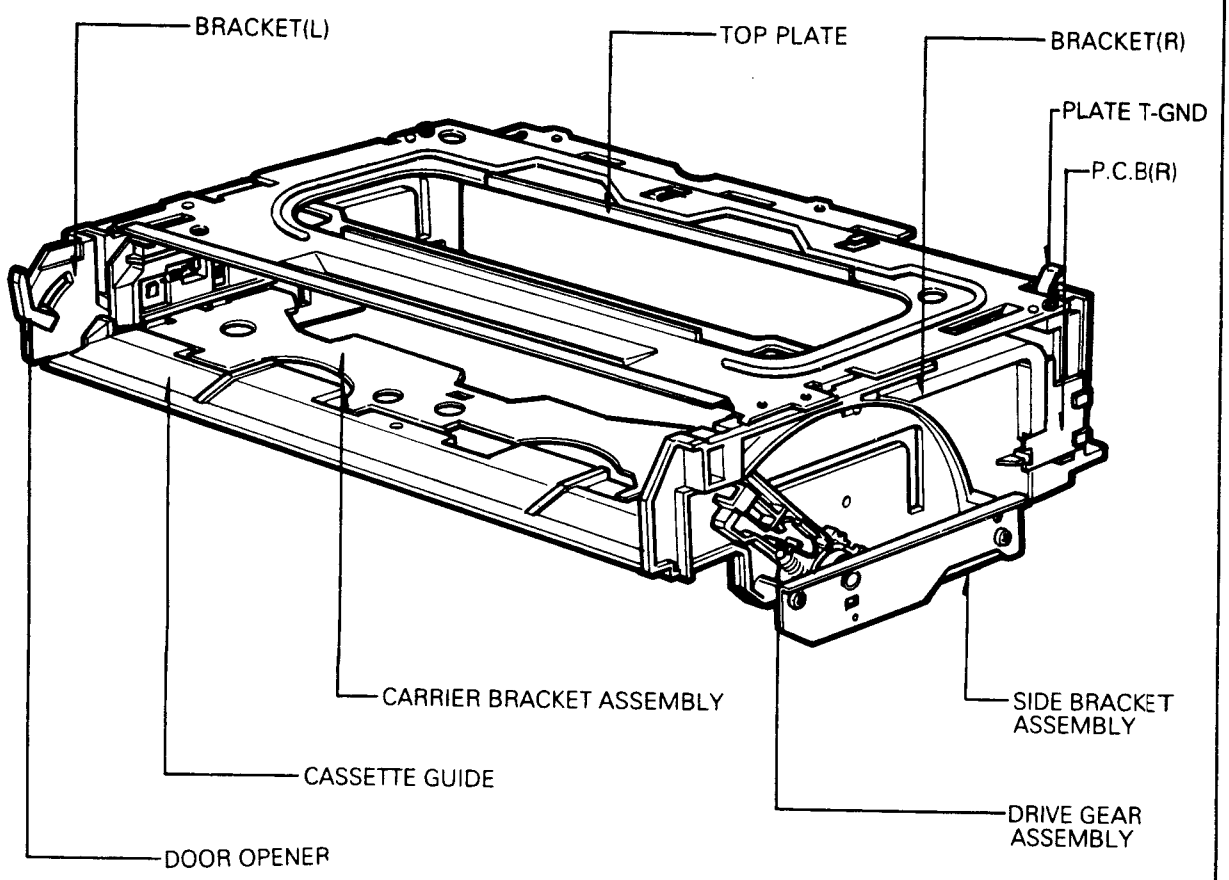
FRONT LOADING MECHANISM DISASSEMBLY

• Front Loading Mechanism Parts Location



Front Loading Mechanism Parts Location

1. Component list below will be discribed as if the top and bottom covers and the front panel have already been removed.
2. P.C.B Assembly
3. Top Plate
4. Carrier Bracket Assembly
5. Cassette Guide
6. Side Bracket Assembly
7. Bracket(L), (R)
8. Door Opener
9. Drive Gear Assembly

1. Front Loading Mechanism Assembly (Fig. A-1-1)

1) Remove the Top and Bottom Covers and the Front panel.
2) Unplug the connector.
3) Remove two screws(A).
4) Lift up the Front Loading Mechanism in the direction of arrow(C).

*** NOTE**

1) When disassembling and reassembling
① Give special attention to removal. because two tabs(D) are engaged.
② Make sure that Bosses of Bracket(L),(R) are properly engaged in the holes of the chassis.
③ To reassemble Front Loading Mechanism, the Drive Gear Assembly should be turned in a counterclockwise as shown in Fig. A-1-2 so that the Rack Gear N.D of Front Loading Mechanism Assembly is meshed into Rack Gear F.L of Deck Mechanism Assembly correctly as shown in Fig. A-1-1.(B).

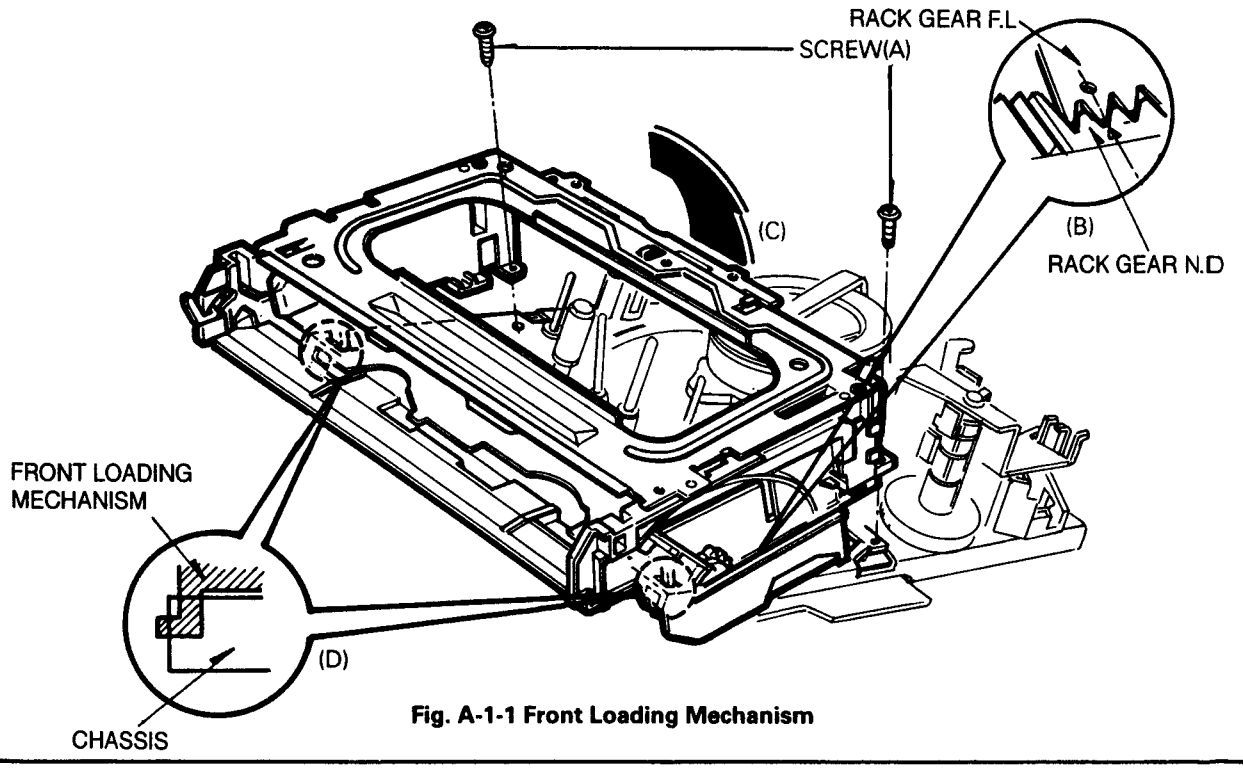


Fig. A-1-1 Front Loading Mechanism

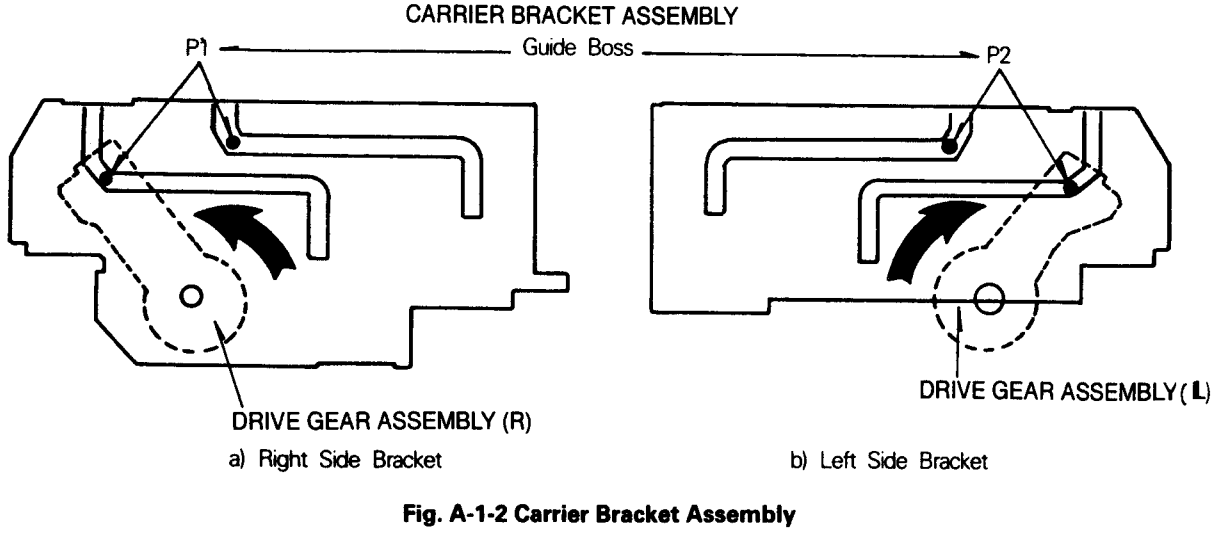


Fig. A-1-2 Carrier Bracket Assembly

2. PCB(Printed Circuit Board) Assembly

2-1. P.C.B Assembly(R)(Fig. A-2)

1) Remove the PCB Assembly(R) by pushing three Hooks (A) outward.
2) Release the Lead wire from stoppers.

2-2. PCB Assembly(L).(Fig. A-2)

1) Remove the PCB Assembly(L) by pushing the Hook(B) outward.
2) Release the Lead Wire from stoppers.

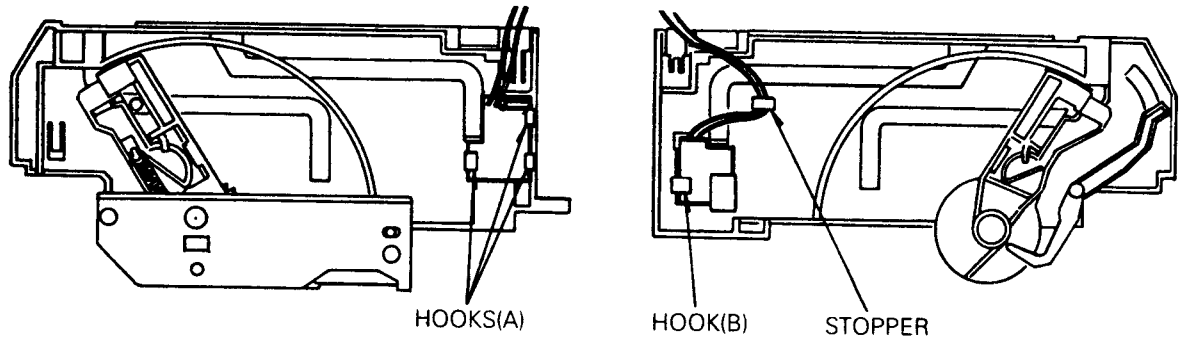


Fig. A-2 PCB Assembly

3. Top Plate(Fig. A-3)

1) Remove two screws(A).
2) Push the upper part of Top plate Ground and then lift up the Top Plate in the direction of arrow(B).

*** NOTE**

1) When reassembling, be certain that the tabs(C) of Top Plate is in both Bracket(L),(R).
1) Then align the guide holes(D) of Top Plate with Bosses of side Bracket(L),(R).

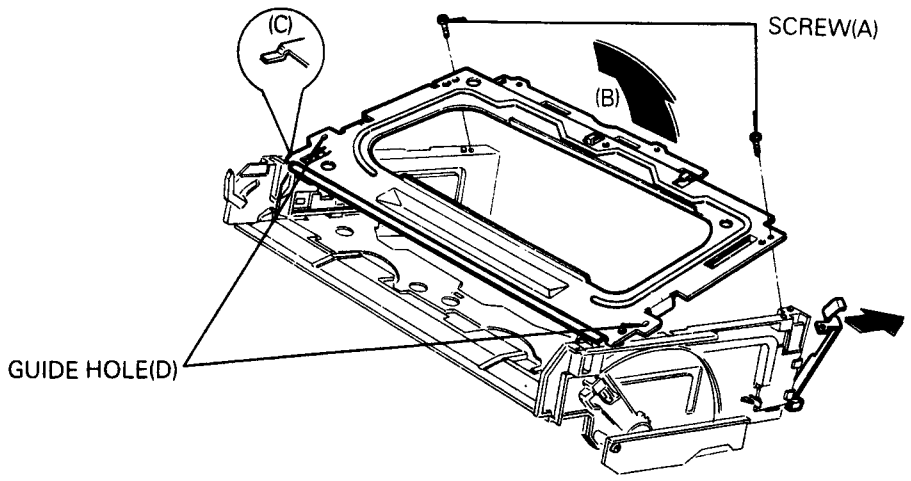


Fig. A-3 Top Plate

VCR

4. Carrier Bracket Assembly

4-1. Carrier Bracket Assembly(Fig. A-4-1)

1) Remove the Carrier Bracket Assembly by moving it in the direction of arrow(C).

*** NOTE**

1) When reassembling, be sure that parts(A) of Carrier Bracket Assembly is seated in parts(B) of Bracket(L),(R).

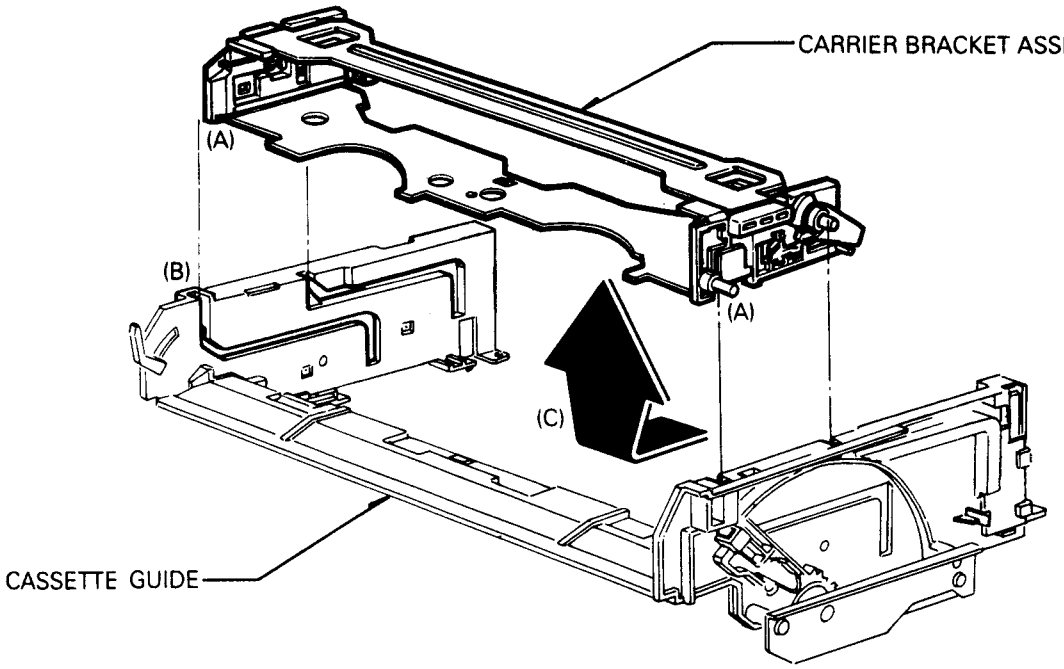


Fig. A-4-1 Carrier Bracket Assembly

4-2. Cassette Opener(Fig. A-4-2)

1) Release the spring O.C from the Hook(A) and then release it from Hooks(C) of cassette opener.
2) Remove the cassette opener by releasing the Hook(B) from the Holder(R).

4-3. Rid Opener(Fig. A-4-2)

1) Remove the Rid opener by pushing it outward.

*** NOTE**

1) When reassembling, seat the upper part of the Rid opener in the grooved of Holder(R) and push it inward.

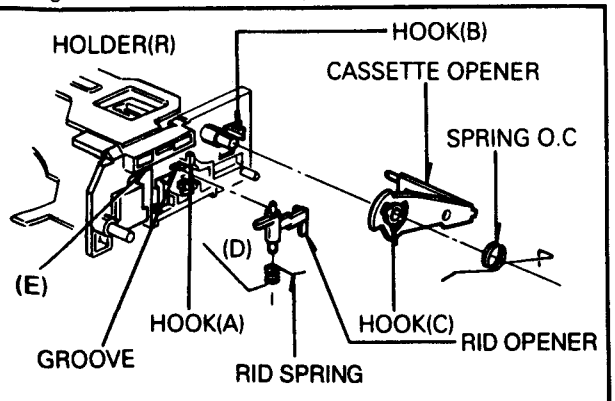


Fig. A-4-2. Cassette Door Opener/Rid Opener

4-4. Detect Lever and Detect Spring

1) Remove the spring detect.
2) Lower the side(A) of Detect Lever and then remove the Detect Lever by pushing it outward.

*** NOTE**

1) When reassembling, make sure that the part(C) of Detect Lever set in the part(B) of Holder(R).

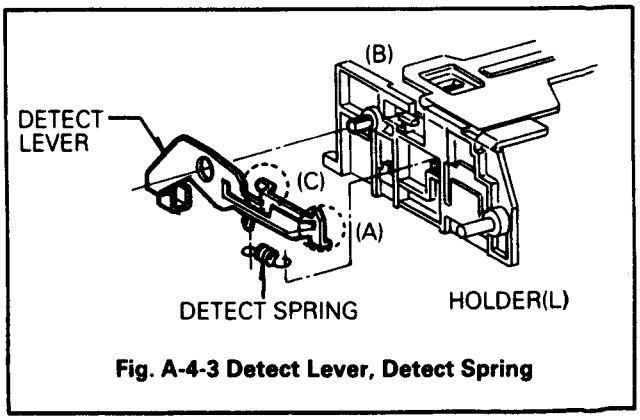


Fig. A-4-3 Detect Lever, Detect Spring

VCR

4-5. Bracket Support (Fig. A-4-4)

1) Take the Support Bracket out by releasing hooks(A),(B).

*** NOTE**

1) When disassembling and reassembling, be careful because heavy force can damage the hooks.

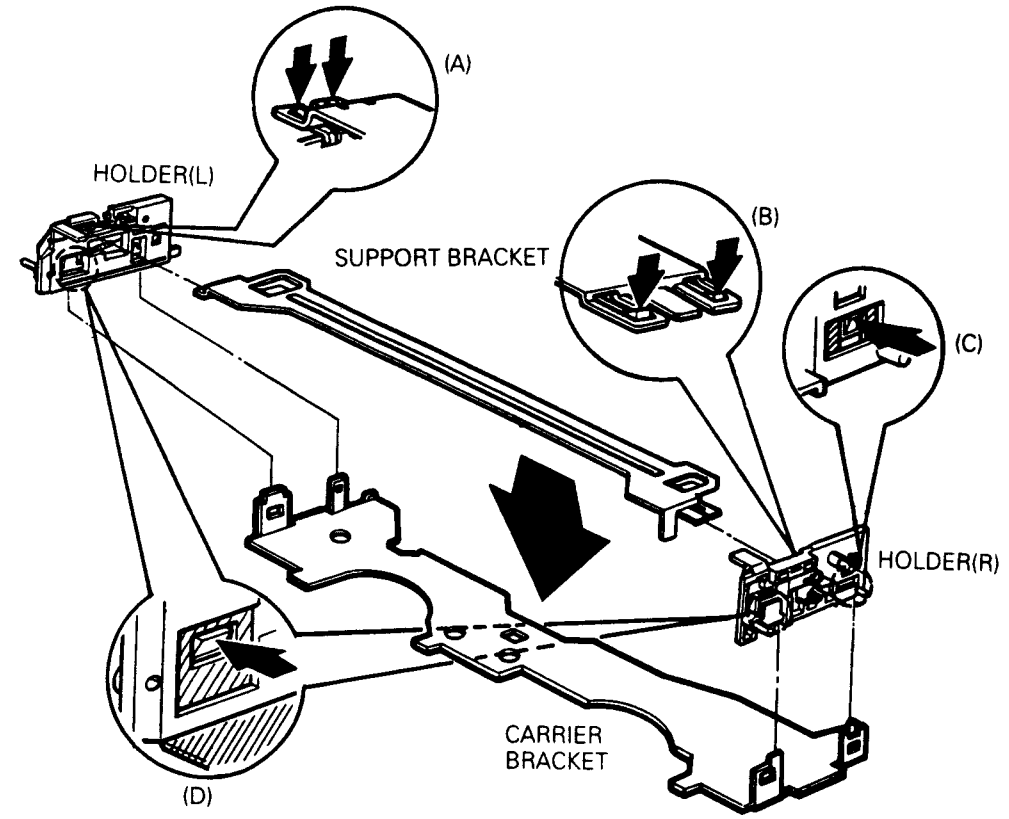


Fig. A-4-4 Bracket Support/Bracket Carrier

4-6. Carrier Bracket Assembly(Fig. A-4-4)

1) Remove the Carrier Bracket out by releasing hooks(C),(D).

5. Cassette Guide(Fig. A-5)

1) Remove the Switch Spring when the Front Loading Mechanism Assembly turned over.
2) Push two hooks(B) outward.
3) Remove the Cassette Guide by pushing two hooks(A). outward(if one is removed, the other will be easy to remove)

*** NOTE**

1) When reassembling

① Seat projections(E) of Cassette Guide in holes of Bracket Assembly(L),(R) and then engage the Hook(A).

② After finishing previous step, fix the Cassette Guide to the Bracket Assembly(L),(R) by pushing two hooks(B) inward.

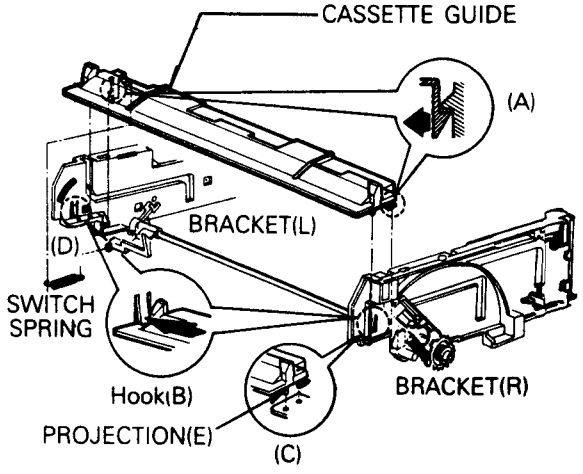


Fig. A-5 Cassette Guide

VCR

6. Side Bracket Assembly(Fig. A-6-1)

1) Remove two screws(A) and then remove the Side Bracket Assembly and the Rack Gear N.D.

*** NOTE**

1) When reassembling

① Turn the Drive Gear Assembly in the direction of arrow (C).

② Reassemble the Rack Gear N.D. to the Side Bracket Assembly, as shown in Fig. A-6-2, and then reassemble it to the Bracket Assembly(L), this time the Assembling Figure should be the same as(B) at the rectangular hole of Bracket Side.

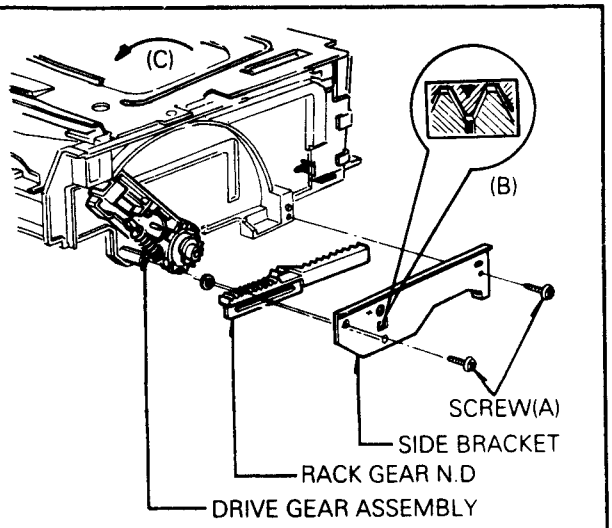


Fig. A-6-1 Side Bracket Assembly

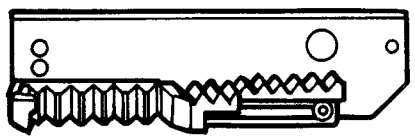


Fig. A-6-2

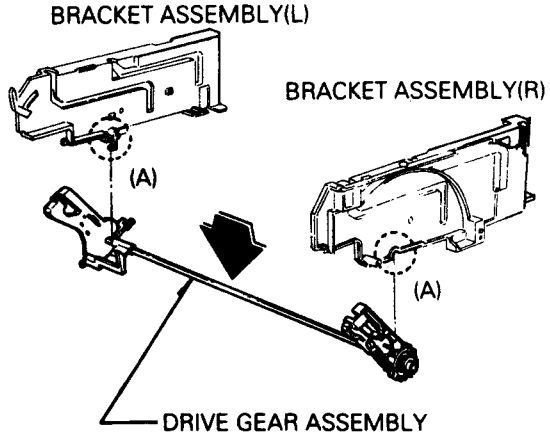


Fig. A-7 Bracket Assembly(L),(R)

7. Bracket Assembly(L),(R)(Fig. A-7)

1) Seperate the Bracket Assembly(L),(R) from the Gear Assembly Drive.

*** NOTE**

1) When reassembling, seat the shaft in the part(A) of Bracket Assembly(L),(R).

8. Door Opener(Fig. A-8)

1) Remove the Door Opener by pushing Hook(A) outward.

*** NOTE**

1) When reassembling, seat the part(B) of Door Opener in the hole( ) Bracket(L).

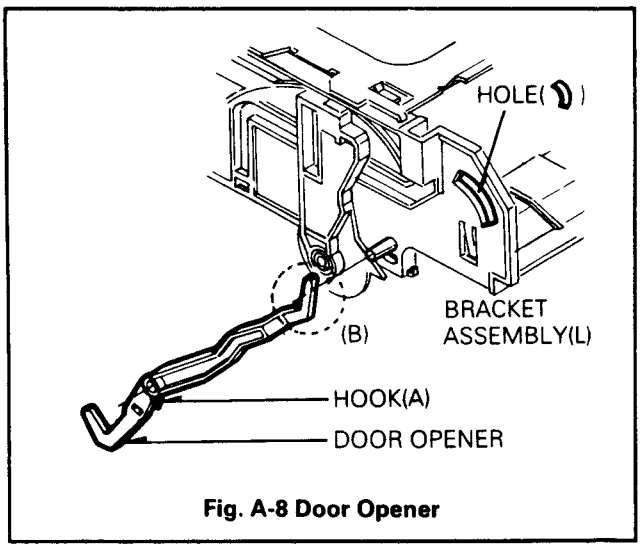


Fig. A-8 Door Opener

9. Drive Gear Assembly

9-1. Drive Gear Assembly(Fig. A-9-1)

1) Remove the Drive Gear Assembly from the Bracket Assembly(L),(R).

9-2. Cushion Spring(Fig. A-9-1)

1) Remove the cushion spring from the Gear R .

9-3. Cap-D(Fig. A-9-1)

1) Remove the Cap-D by lifting it up.

9-4. Spring C.C(Fig. A-9-1)

1) Remove the Spring C.C from the Gear R.

9-5. Gear C(Fig. A-9-1)

1) Remove the Gear C by lifting up when the projection of Gear C is aligned with the hole of Gear R while rotating the Gear C in the counterclockwise direction.

VCR

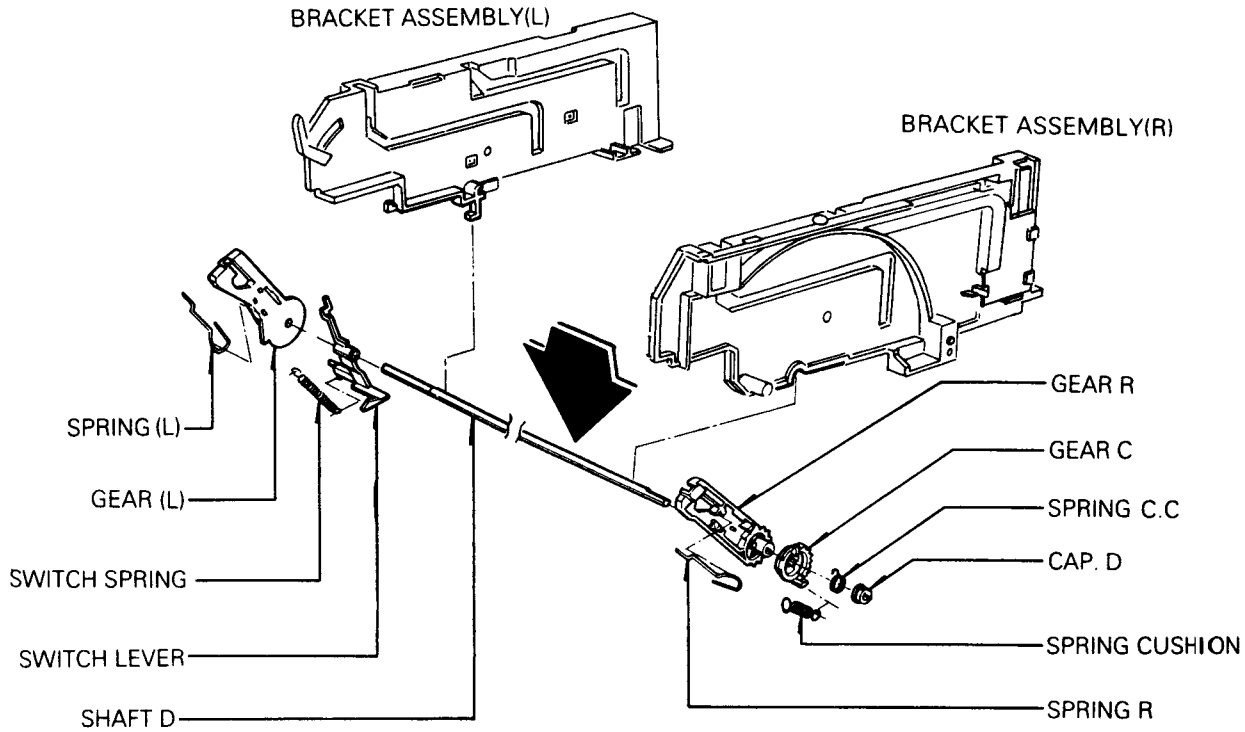


Fig. A-9-1 Gear Assembly Drive

*** NOTE**

1) When reassembling, seat the projections of Gear R in the holes of Gear R when the projection of Gear C is aligned with the hole of Gear R, and then keep the Gear C turned in the clockwise direction.

9-6. Gear R(Fig. A-9-1)

1) Lift up the Gear R from the Shaft.

9-7. Spring R(Fig. A-9-2)

1) Remove the Spring R by releasing Hooks.

*** NOTE**

1) When reassembling, be certain Spring R in the part(A) of Gear R.

9-8. Gear L.(Fig. A-9-1)

1) Remove the Gear L from the shaft.

9-9. Spring L (Fig. A-9-2)

1) Remove the Spring L by releasing Hooks from the Gear L.

*** NOTE:**(Refer to the Spring R Section)

9-10. Switch Lever(Fig. A-9-1)

1) Remove the Switch Lever from the shaft.

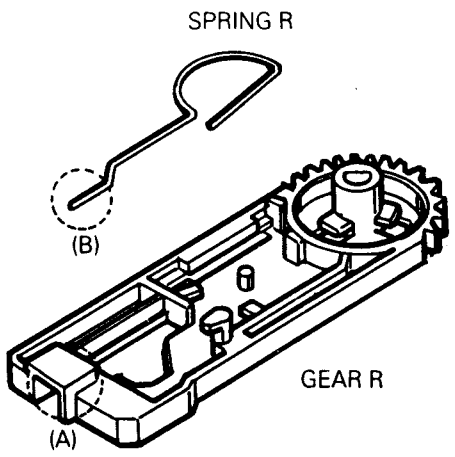


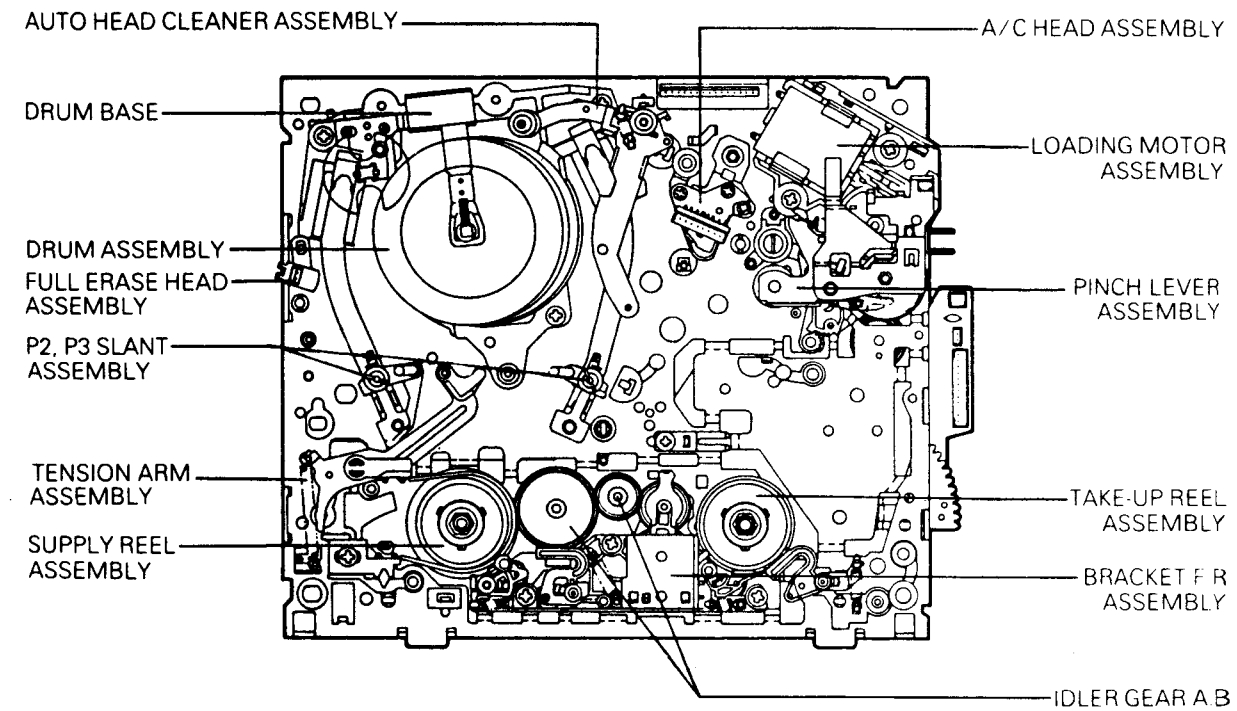
Fig. A-9-2 Spring R

VCR

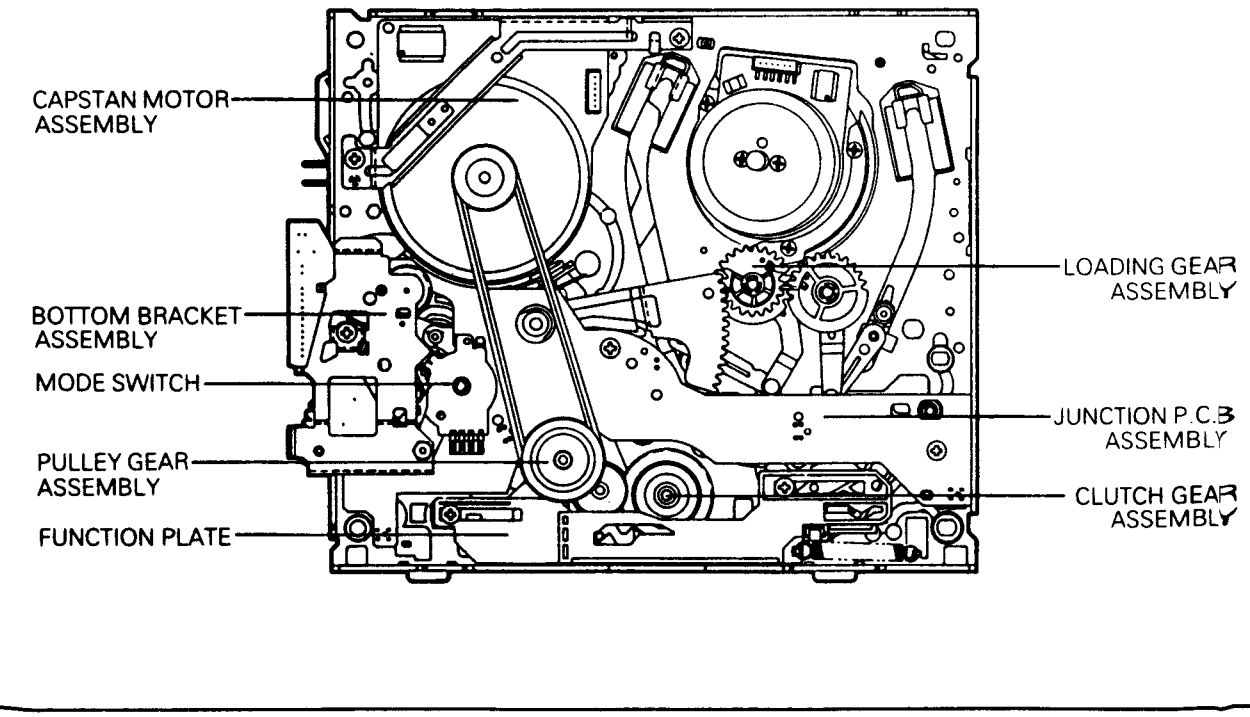
DECK MECHANISM DISASSEMBLY

• Deck Mechanism Parts Location

Top Side



Bottom Side



VCR

1. Auto Head Cleaner Assembly (Fig. B-1) (Optional Item)

1) Remove the Cleaner Arm Assembly (Auto Head Cleaner Assembly) by pushing the Locking Tab.(B) outward.
2) Remove the Cleaner Upper Spring and then remove the Cleaner Upper Arm Sub Assembly.
3) Remove the Cleaner Spring.

• NOTE

1) When reassembling, do not touch the Video Head Tip with fingers or tools.

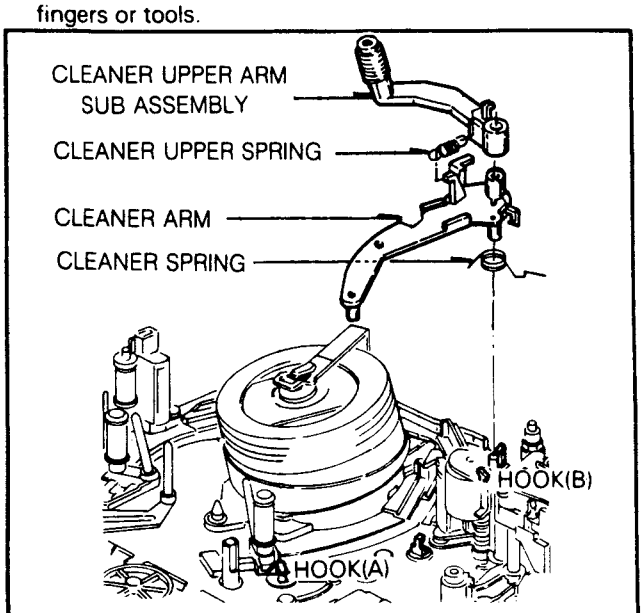


Fig. B-1 Auto Head Cleaner Assembly

2. Drum Assembly and Drum Base(Fig. B-2)

1) Remove the Auto Head Cleaner Assembly. (Option)
2) Unplug the connector with the Deck Mechanism Assembly turned over.
3) Loosen the screw(A) and then lift up the Drum Brush.
4) Remove two screws(B) and then lift up the Drum Assembly and Drum Base from the Deck Mechanism Assembly.
5) Separate the Drum Assembly from the Drum Base by Loosening three screws(C) on the back of Drum Base.

• NOTE

1) When disassembling and reassembling
① Do not touch the Video Head tip with fingers or tools. (Give special attention to disassembling and reassembling of Auto Head Cleaner Assembly)
② After reinstalling the Drum Brush, the Drum Brush should be aligned with the center of vertical axis of Drum Assembly.
③ After completing the reassembly, adjust the transportation system and the Servo P.G.

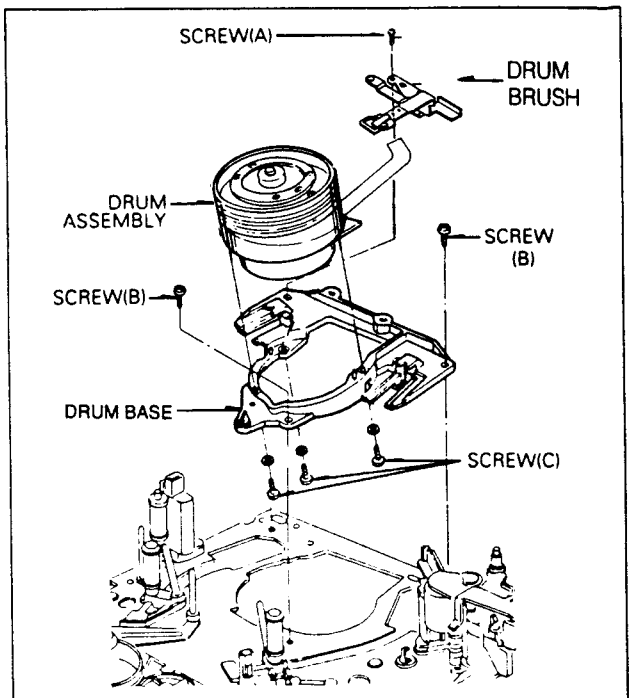


Fig. B-2 Drum Assembly/Drum Base

3. Drum Assembly

3-1. Drum Sub and Motor Assembly (Fig. B-3-1)
: New Type (No two screws and P.C.B on the Drum)

1) Remove the Drum Base from the Deck Mechanism Assembly.
2) Separate the Drum Assembly from the Drum Base.
3) Remove two screws(A) and then remove the rotor.
4) Remove three screws(B) and then remove the stator.

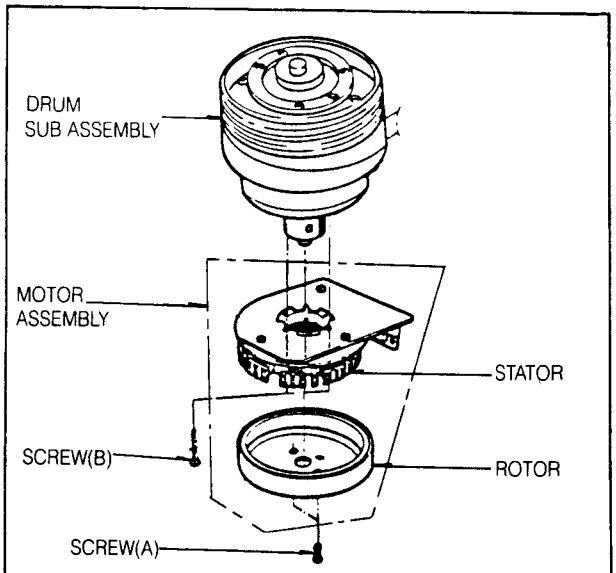


Fig. B-3-1 Drum Sub and Motor Assembly

• NOTE

1) When disassembling and reassembling
① Do not touch the Video Head Tip with fingers or tools.

VCR

3-2. Upper and Lower Drum Assembly (Fig. B-3-2) : Old Type (There are two screws and P.C.B on the Drum)

1) Remove the Drum Assembly and Drum Base from the Deck Mechanism Assembly.
2) Separate the Drum Assembly from the Drum Base.
3) Remove two screws(A).
4) Remove the P.C.B.
5) Separate the upper Drum Assembly from the Lower Drum Assembly.

*** NOTE**

1) When disassembling and reassembling
① Do not touch the Video Head Tip with fingers or tools.
② Make sure that the color(white) marked on the P.C.B of the upper Drum should coincide with the color(Green) marked on the Flange Assembly.

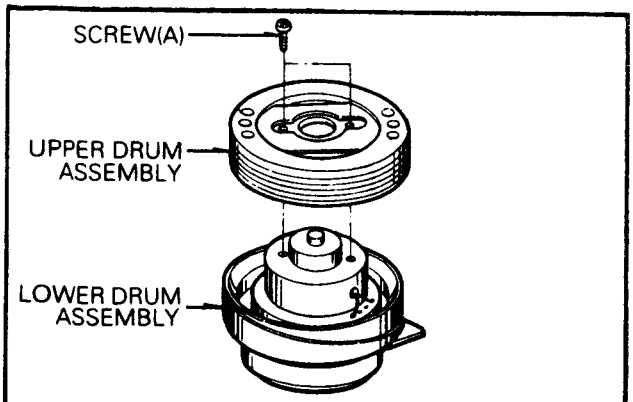


Fig. B-3-2 Upper/Lower Drum Assembly

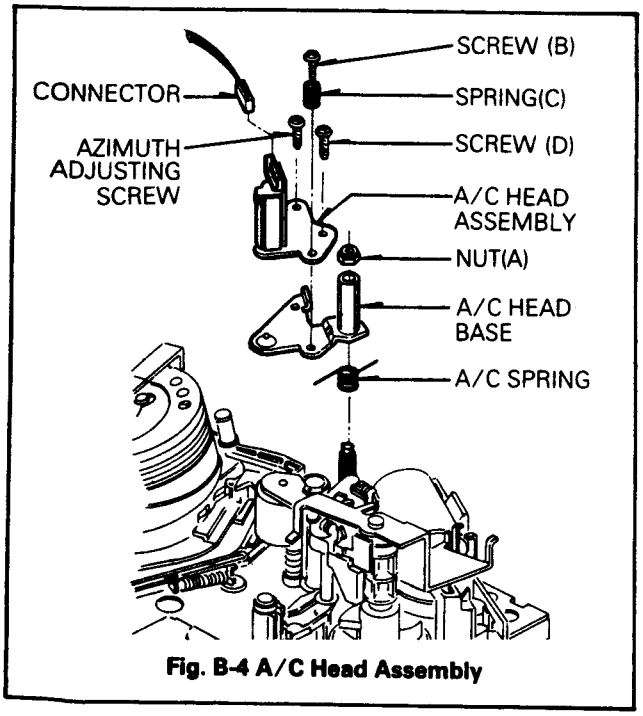


Fig. B-4 A/C Head Assembly

4. A/C(Audio/Control) Head Assembly (Fig.B-4)

1) Unplug the connector
2) Remove the Nut(A), and then lift up the A/C Head Assembly.
3) Remove the Azimuth Adjusting Screw.
4) Remove two screws(B),(D) and then separate the A/C Head Assembly from the Base A/C Head Assembly.

*** NOTE**

1) When disassembling
① First of all, release the spring A/C.
② Do not touch the A/C Head Tip with fingers or tools.
③ After reinstalling the Audio Control Head Assembly, adjust the Tilt, Azimuth and Height of A/C Head.

5. Pinch Lever Assembly(Fig. B-5)

1) Remove one Nut, and then remove the Dew Bracket.
2) Lift up Pinch Lever Assembly.
3) Remove the Pinch Spring, and remove the Pinch Lever.
4) Remove the Stopper Spring and remove the PinchStopper by lifting it up when the Hook of Pinch Stopper is aligned with the hole of Pinch Arm while rotating the Pinch Stopper in the counterclockwise direction.
5) Remove the Pinch Cap, and then remove the Pinch Roller Assembly.

*** NOTE**

1) When disassembling and reassembling
① Be careful not to get any foreign substance on the Roller.
② When disassembling the Pinch Cap, be careful not to damage the Pinch Arm.

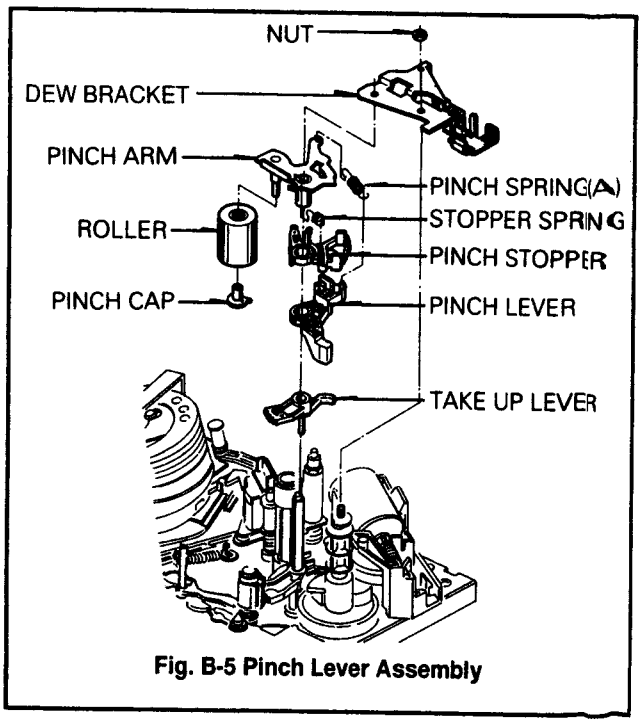


Fig. B-5 Pinch Lever Assembly

VCR

6. Loading Motor Assembly(Fig. B-6-1, B-6-2)

1) Remove the Dew Bracket.
2) Unplug the connector from the Junction P.C.B Assembly
3) Remove two screws(A).
4) Remove the worm wheel by pushing it down.
5) Remove the Loading Motor Assembly by pushing(C) and (D) outward.
6) Remove the worm Gear Assembly from the Loading Motor Assembly by pushing it.

*** NOTE**

1) When reassembling

① Make sure that the worm assembly is seated in the axis of Loading Motor.

② Two grooves(G) of Loading Motor should be turned up and two projections(F) of Bracket Assembly should be seated in each at the two holes(E)(Fig. B-6-1).

③ Take notice of the polarity of the Loading Motor.

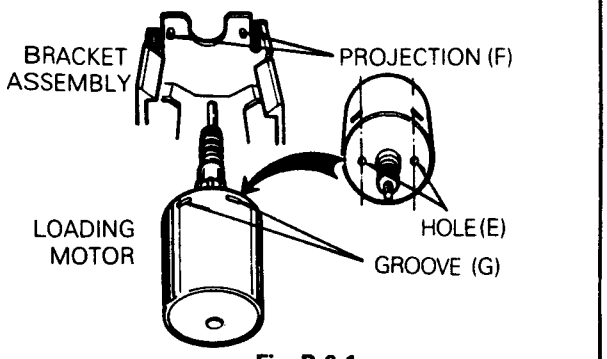


Fig. B-6-1

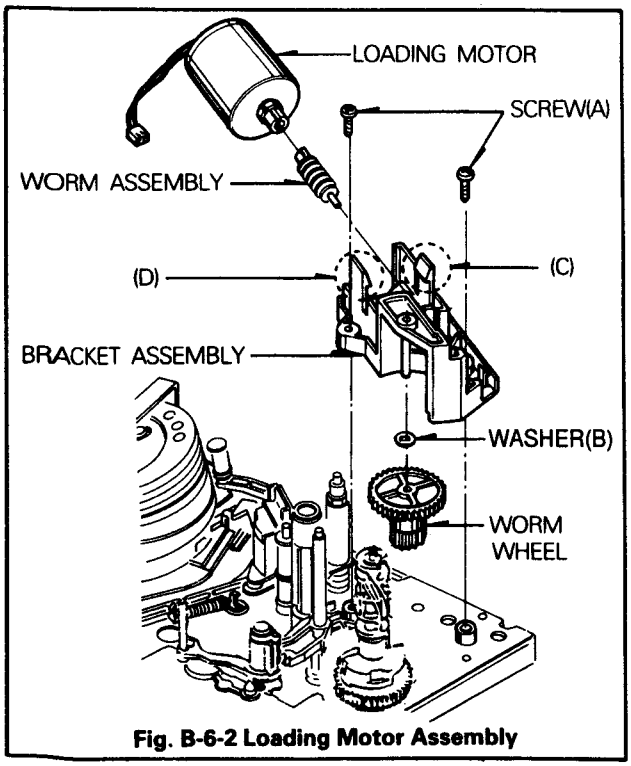


Fig. B-6-2 Loading Motor Assembly

7. Take Up Lever(Fig. B-7)

1) Remove the Loading Motor Assembly.
2) Remove the Dew Bracket(Fig. B-5).
3) Remove the Pinch Lever Assembly(Fig. B-5).
4) Keep the Pinch Gear turned in the clockwise direction (180°).
5) Remove the Take-Up Lever by pushing the hook(A) outward.

*** NOTE**

1) When disassembling and reassembling

① When disassembling the Take-Up Lever, be careful not to break the Hook(A).

② When reassemble the Take-Up Lever,align the appendant Gear of Lever Take-Up with the appendant Gear of Take-up Arm

③ Reassemble the Take-Up Lever completely by hooking (A).

④ Be sure to replace together Take-Up Lever and Pinch Gear.

⑤ Be sure to assemble Pinch Lever Assembly before operating.

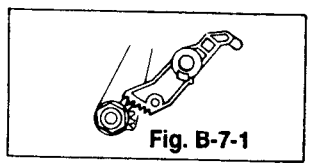


Fig. B-7-1

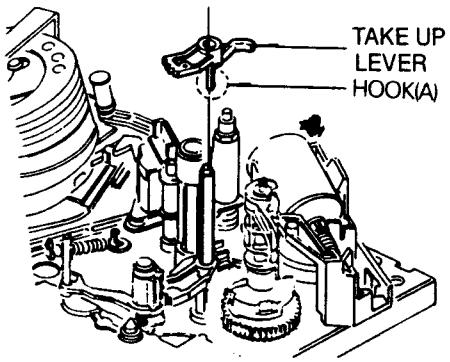


Fig. B-7. Take-Up Lever

8. Take Up Arm Assembly(Fig. B-8)

1) Remove the Loading Motor Assembly.
2) Remove the Dew Bracket, Pinch Gear, and the Take-Up Lever.
3) Remove one Washer(A).
4) Remove the Take-Up Arm Assembly by lifting it up.
5) Remove the spring(B).

*** NOTE**

1) When reassembling

① Align the Gear of Take-Up Arm with the Gear of Take-Up Lever(Fig. B-7-1).

VCR

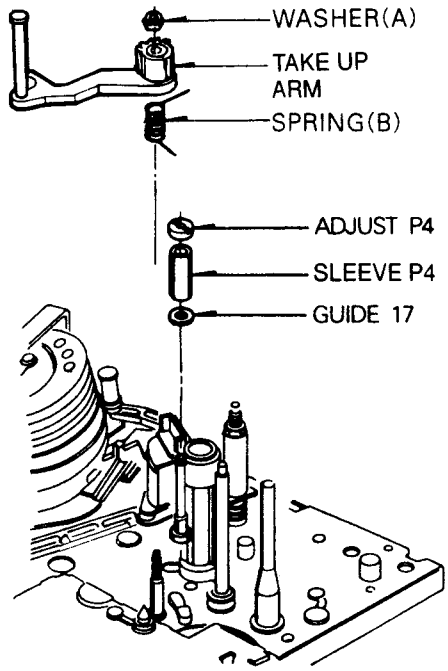


Fig. B-8 Take-Up Arm Assembly/P4

9. P4 Assembly(Fig. B-8)

1) Remove the Adjust P4.
2) Remove the Sleeve P4.
3) Remove the Guide 17.

10. Pinch Gear(Fig. B-10-1, B-10-2)

1) Remove the Loading Motor Assembly.
2) Remove one Nut(A) and then remove the Dew Bracket (Fig. B-5).
3) Remove the Pinch Lever Assembly by lifting it up(Fig. B-5)
4) Keep the Pinch Gear turned in the clockwise direction (180°).
5) Remove the Take-Up Lever by pushing the hook(A) outward(Fig. B-7).
6) Keep the Pinch Gear turned in the counterclockwise direction (180°).
7) Remove the Pinch Gear Assembly.

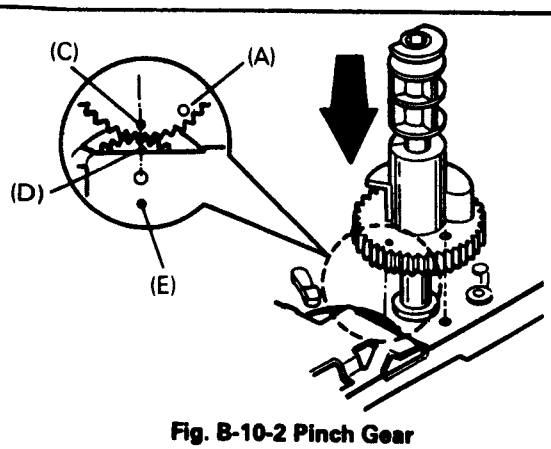


Fig. B-10-2 Pinch Gear

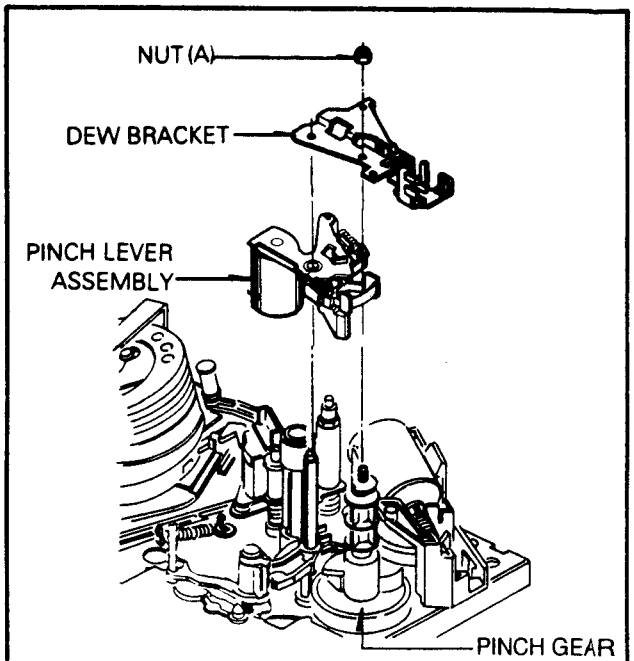


Fig. B-10-1 Pinch Gear Assembly

• NOTE

1) When reassembling, align the hole(A) of Pinch Gear with the hole of chassis, and the hole(C) of Pinch Gear with the groove(D) of the P.C.Gear. Hole(E) of chassis should be aligned with the hole of P.C.Gear.
2) Be sure to replace together Take-Up Lever and Pinch Gear.
3) Be sure to assemble Pinch Lever Assembly before operating.

11. FE(Full Erase) Head Assembly(Fig. B-11) (Optional Item)

1) Unplug the connector.
2) Remove one screw(A), and then remove the FE Head.

• NOTE

1) When disassembling and reassembling
① Do not touch the Video Head Tip with fingers or tools.

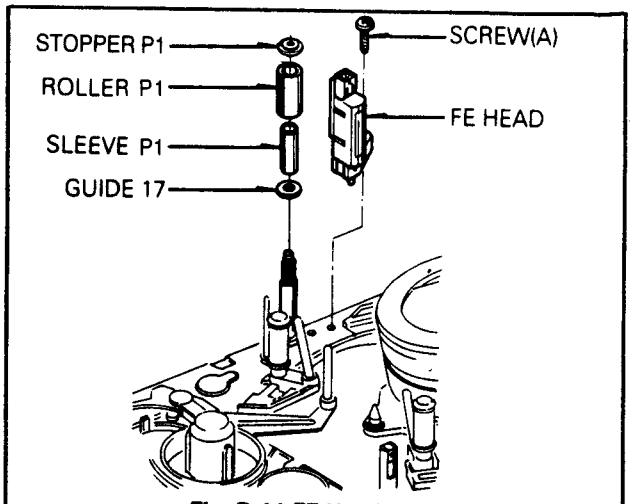


Fig. B-11 FE Head/P1

VCR

12. P1 Assembly(Fig. B-11)

1) Remove the Stopper P1.
2) Remove the Roller P1 .
3) Remove the Sleeve P1.
4) Remove the Guide 17.

13. Tension Arm Assembly(Fig. B-13)

1) Remove one screw(C).
2) Remove the Tension Spring.
3) Remove the Tension Arm Assembly by pushing hooks outward with the Deck Mechanism Assembly turned over.
4) Remove the Tension Band Assembly from the Tension Arm by pushing Hooks of Holder(A).

• NOTE

1) When disasembling and reassembling, give special attention to the disassembling and reassembling of Tension Arm Assembly, because the Tension Band is interposed between the Supply Reel and the Soft Brake.

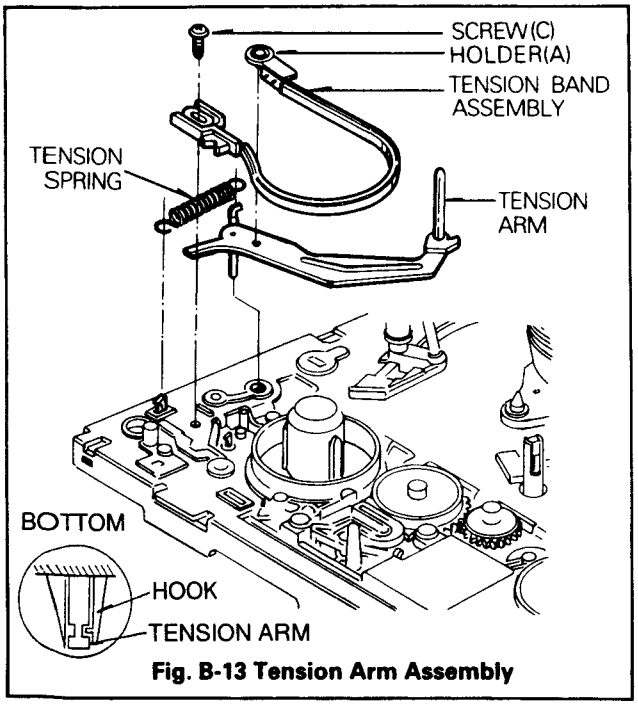


Fig. B-13 Tension Arm Assembly

14. Supply Soft/Supply Main/Take-Up Soft /Take-Up Main Brake Assembly

1) Supply Soft Brake(SSB)
   ① Remove the SSB Spring.
   ② Remove the SSB.
2) Supply Main Brake(SMB)
   ① Remove the SMB Spring.
   ② Remove the SMB.
3) Take Up Soft Brake(TSB)
   ① Remove the TSB Spring.
   ② Remove the TSB.
4) Take-Up Main Brake(TMB)
   ① Remove the TMB Spring.
   ② Remove the TMB.

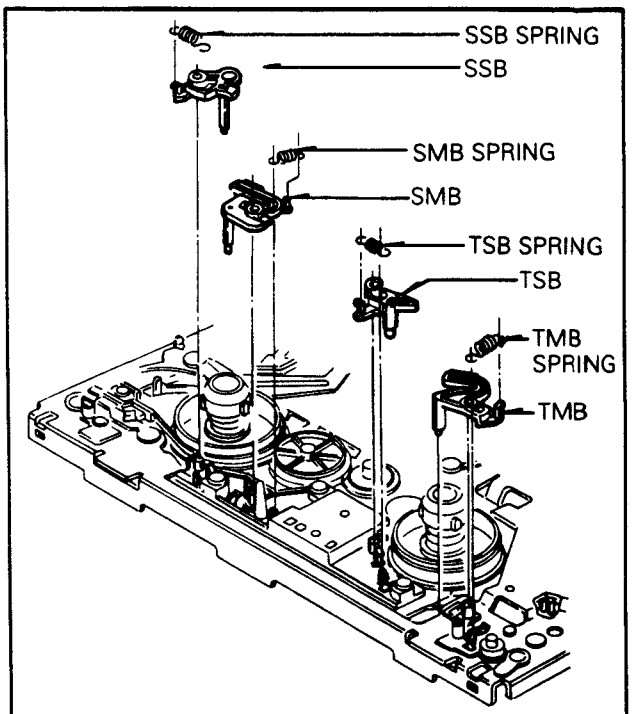


Fig. B-14 SMB/SSB/TMB/TSB

15. Bracket F/R(FF/Rewind) Assembly (Fig. B-15)

1) Remove the TMB.
2) Remove the Washer(A), and then remove the Gear F.R.
3) Remove three screws, and then remove Bracket F/R Assembly from the Deck Mechanism Assembly.
4) Remove the Washer(B), and spring Up/D, and then remove the Gear Up/D.
5) Remove the shaft(C), and then remove the Arm F.R Lever F.R and Spring F.R.

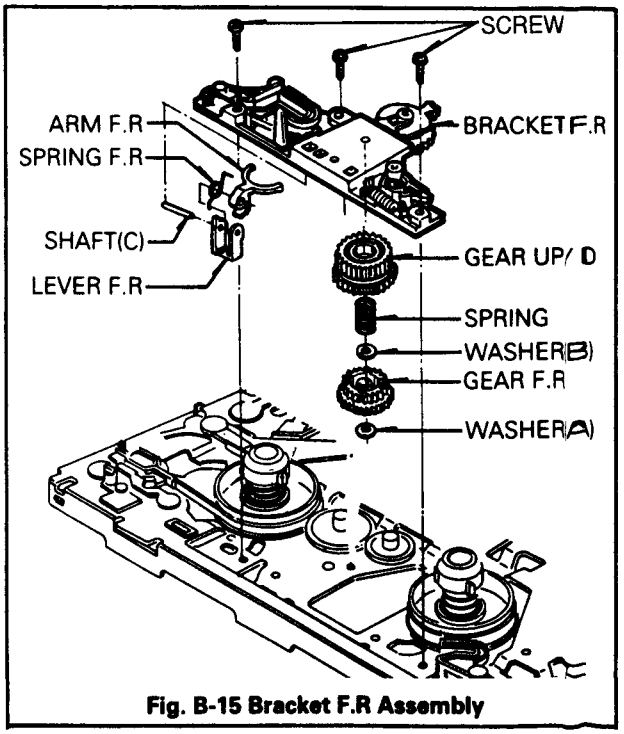


Fig. B-15 Bracket F.R Assembly

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16. Supply Reel Assembly(Fig. B-16)

1) Remove the Tension Band Assembly.
2) Remove the Bracket F/R.
3) Lift up the Supply Reel Assembly from the Deck Mechanism Assembly.

17. Take Up Reel Assembly(Fig. B-16)

1) Remove the TMB(Fig. B-14)
2) Lift up the Take-up Reel Assembly from the Deck Mechanism Assembly.

*** NOTE**

1) When reassembling

① Make sure that the Supply and Take Up Reel are not exchanged.

② After reinstalling the Supply Reel Assembly, Adjust the Tension.

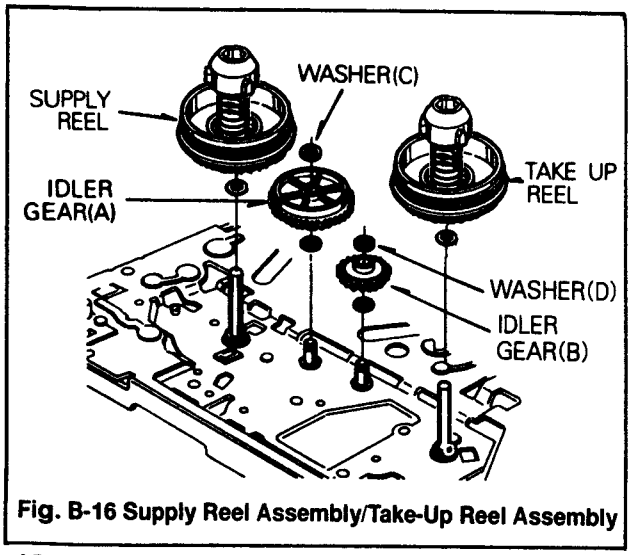

Fig. B-16 Supply Reel Assembly/Take-Up Reel Assembly

18. Idler Gear(A), (B)(Fig. B-16)

1) After removing the Supply Reel and supply Main Brake Assembly, remove the washer(C) and then remove the Idler Gear(A).
2) Remove the Washer(D) and remove the Idler Gear(B).

19. Pulley Gear Assembly(Fig. B-19)

1) Turn over the Deck Mechanism Assembly.
2) Remove the Capstan Belt.
3) Remove the Washer(A) and lift up the Pulley Gear.

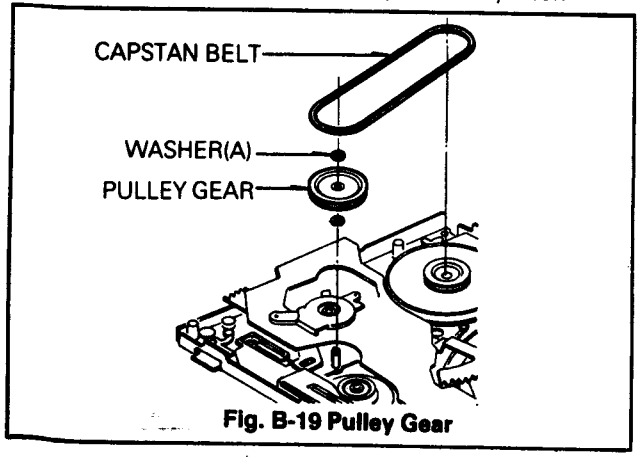

Fig. B-19 Pulley Gear

20. Bracket Bottom Assembly(Fig. B-20)

1) Remove one screw(A).
2) Remove one Hexagonal Nut, and then lift up the Bracket Bottom Assembly.
3) Remove one Washer(C), and lift up the Ratchet Gear 1.
4) Remove the washer(D), and then remove Ratchet Gear 3 from the Bracket Bottom.

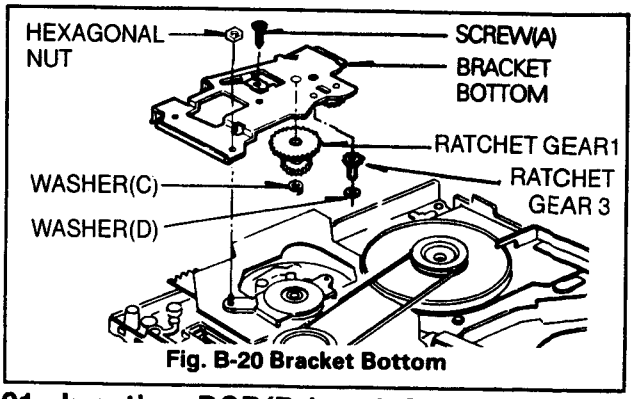

Fig. B-20 Bracket Bottom

21. Junction PCB(Printed Circuit Board) Assembly(Fig. B-21-1)

1) Remove the Bracket Bottom Assembly.
2) Remove two screws(A), (B) and then remove the Junction P.C.B Assembly.
3) Remove the Mode Switch from the Junction P.C.B Assembly.
4) Remove the Reel Sensor, Sensor LEDS and each holder from the Junction P.C.B(Fig. B-21-2).

*** NOTE**

1) When reassembling the Mode Switch, the groove(V) and (U) of Mode Switch should be at their original place in the Eject Mode.

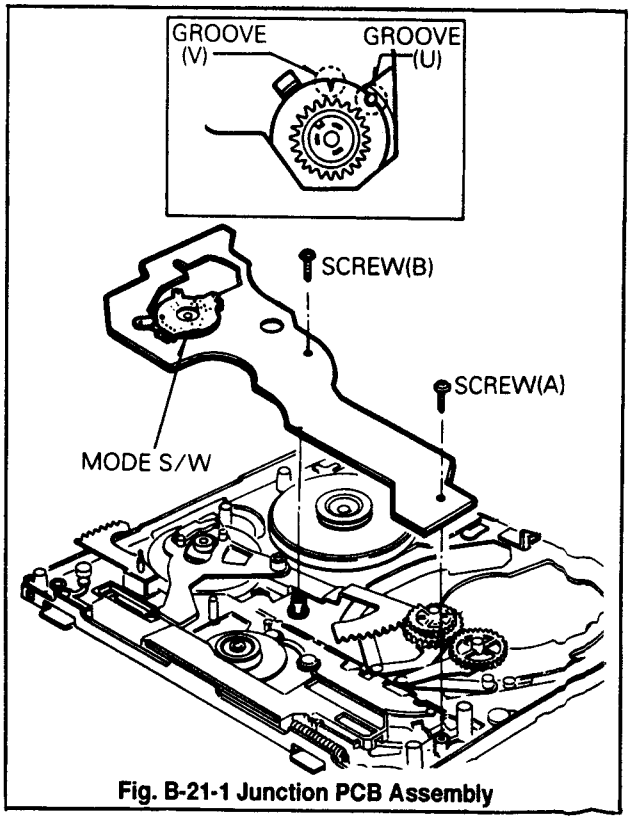

Fig. B-21-1 Junction PCB Assembly

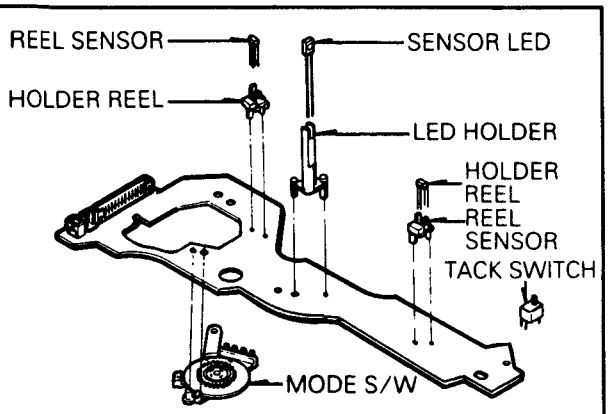

Fig. B-21-2 Mode S/W/Reel Sensor/Sensor Led

22. Capstan Motor and Brake Assembly (Fig. B-22-1)

1) Remove the Junction P.C.B Assembly
2) Hook the end of Capstan Brake Spring to the projection of Capstan Brake and then remove the Capstan Brake Assembly by lifting it up(Fig. B-22-2).
3) Remove two Screws(A), and then remove the Bracket C-Guide.
4) Remove the Connector.
5) Remove three screws(B), and then remove the Capstan Motor Assembly from the Deck Mechanism Assembly.

*** NOTE**

1) When disassembling and reassembling, hook end of the spring on the projection of Cap-Brake and remove it by lifting it up. Reassemble it in the opposite manner.

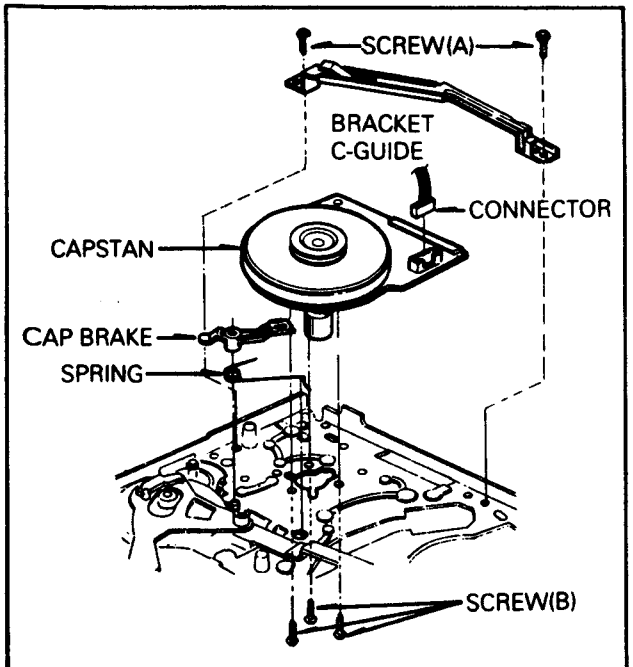

Fig. B-22-1 Capstan Motor Assembly

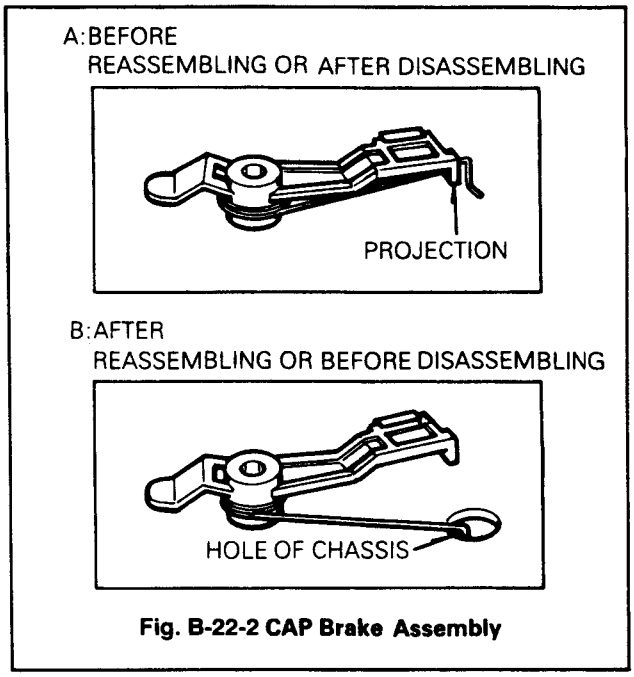

Fig. B-22-2 CAP Brake Assembly

23. Function Plate(Fig. B-23)

1) Remove two screws(B) in Eject Mode.
2) Remove the Function Plate Spring.
3) Push the Function Plate in the direction of arrow(A) and then lift it up.

*** NOTE**

1) When reassembling,the groove of Lower part of Function Plate should be aligned with the shaft of Tension Lever Assembly(Fig. B-29).

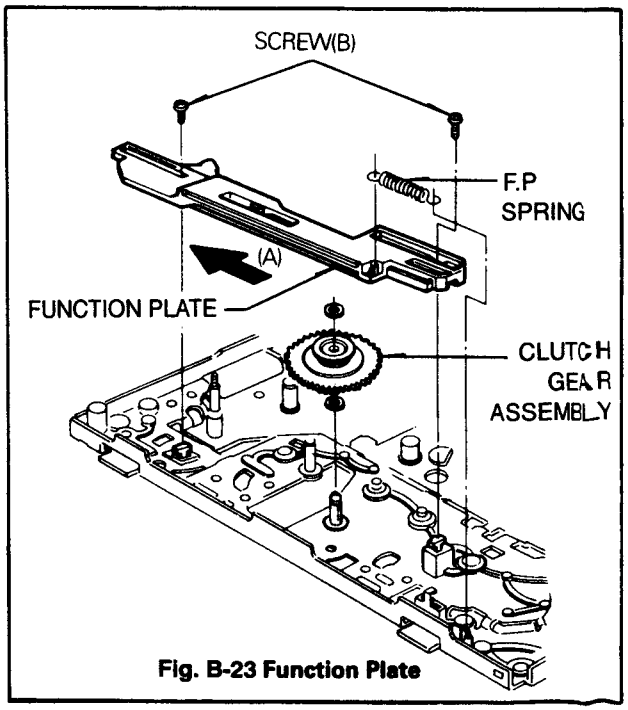

Fig. B-23 Function Plate

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24. Ratchet Lever Assembly(Fig. B-24)

1) Remove the Function Plate.
2) Remove the Junction P.C.B Assembly.
3) Remove the Washer(A) and then remove the Ratchet Lever Assembly.
4) Remove the Ratchet Spring.
5) Remove the Ratchet Lever from the Ratchet 17 by lifting it up when the hook of it is aligned with the hole of Ratchet 17 while rotating it counterclockwise direction.
6) Remove the Washer(B), and turn over the Ratchet 17 and then remove the F-Lever Pin, Spring F-Lever.

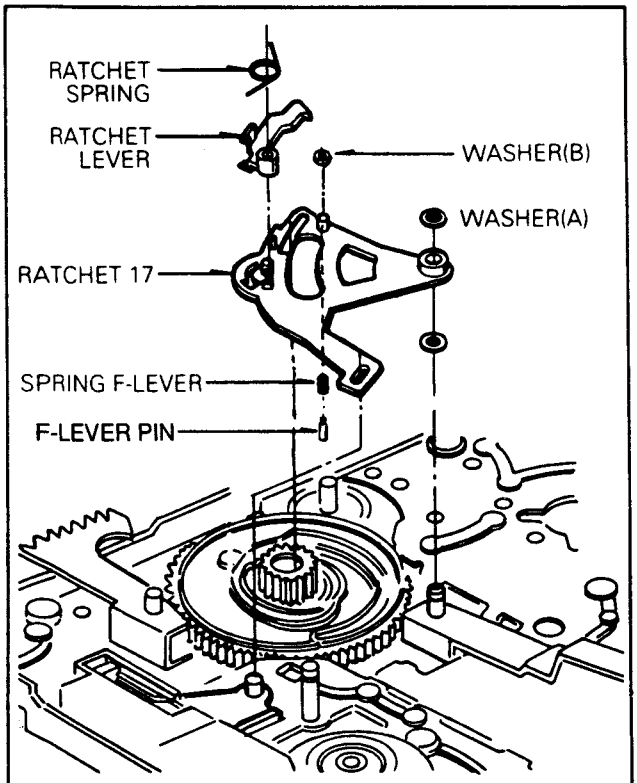


Fig. B-24 Ratchet Lever Assembly

25. Cam Gear/Rack Gear T/Rack Gear FL(Fig. B-25-2)

1) Remove the washer(A) and remove the Ratchet Lever Assembly.(Fig. B-25-1).
2) Remove the washer(B), and then remove the Cam Gear (Fig. B-25-2).
3) Remove the Rack Gear F.L.(Fig B-25-3).
4) Remove the Washer(D).(Fig. B-25-3).
5) Remove the Rack Gear T.(Fig. B-25-3).

*** NOTE**

1) When reassembling

① Align the Projection of Rack Gear T with the hole of Loading Gear.

② Drive the Rack Gear F.L in the direction of arrow(D).

③ Hole of Cam should be aligned with the hole of chassis, and the groove(■) of Cam Gear should be aligned with the hole of PC Gear (Fig. B-26).

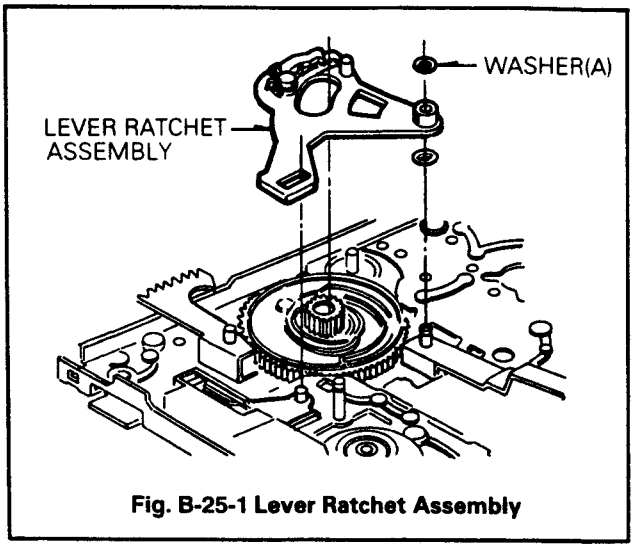


Fig. B-25-1 Lever Ratchet Assembly

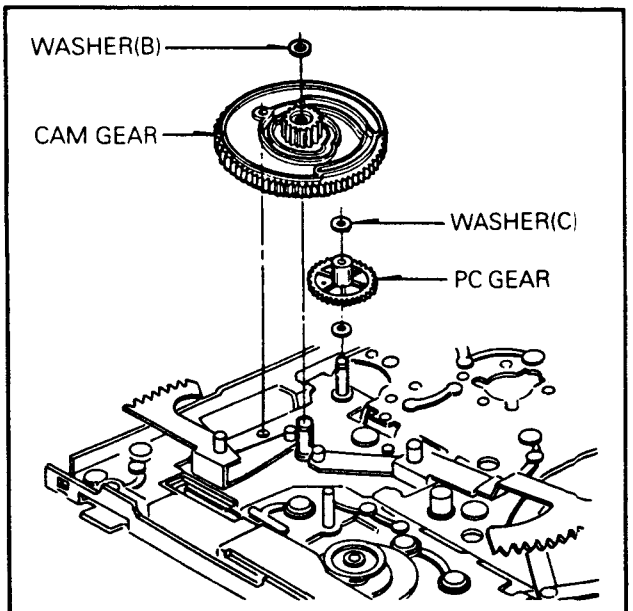


Fig. B-25-2 CAM/PC Gear

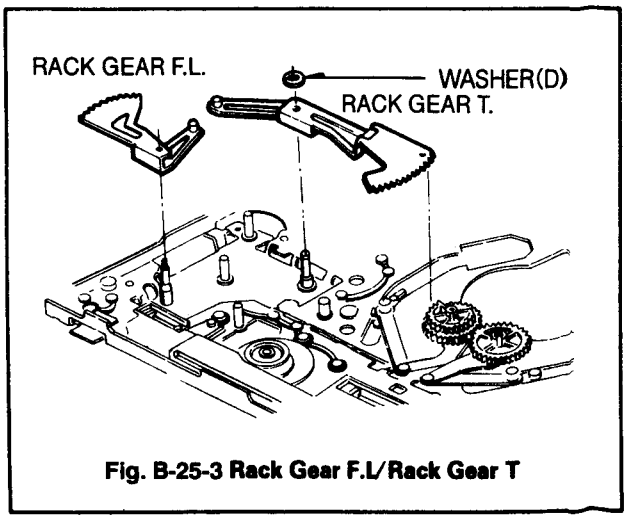


Fig. B-25-3 Rack Gear F.L/Rack Gear T

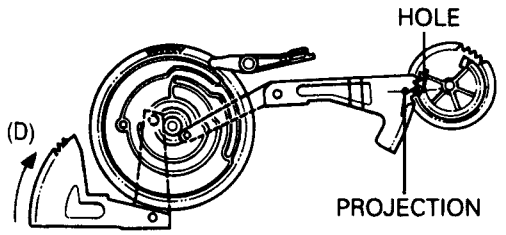


Fig. B-25-4 Rack Gear F.L/Rack Gear T/CAM Gear

26. PC Gear(Fig. B-26)

1) Remove the washer(C).
2) Remove the P.C Gear by lifting it up.

*** NOTE**

1) When reassembling

① The Groove of PC Gear should be aligned with the groove(V) of Cam Gear, and another hole of it should be aligned with the hole of chassis (Fig. B-26).

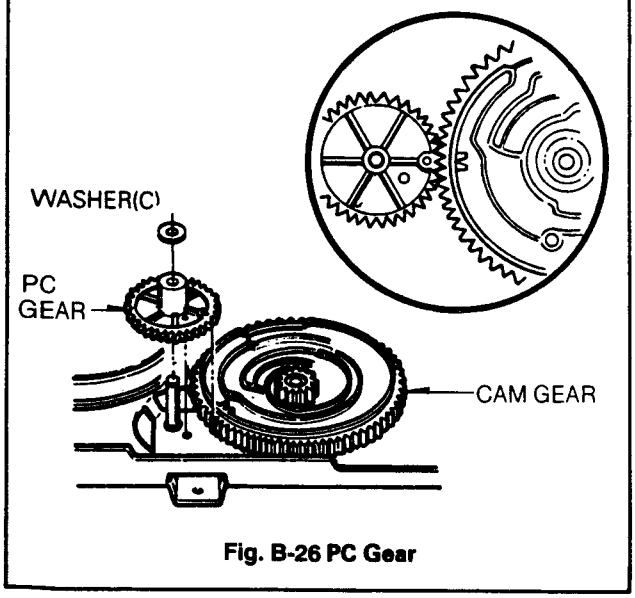


Fig. B-26 PC Gear

27. P2 and P3 Slant Assembly (Fig. B-27)

1) After finishing the disassembly of Drum Assembly, remove the P2 and P3 Slant Assembly by turning the Loading Gear(R) in the clockwise direction.(Loading direction)
2) Loosen the set screws.
3) Remove the Roller Guide from the Slant Base.

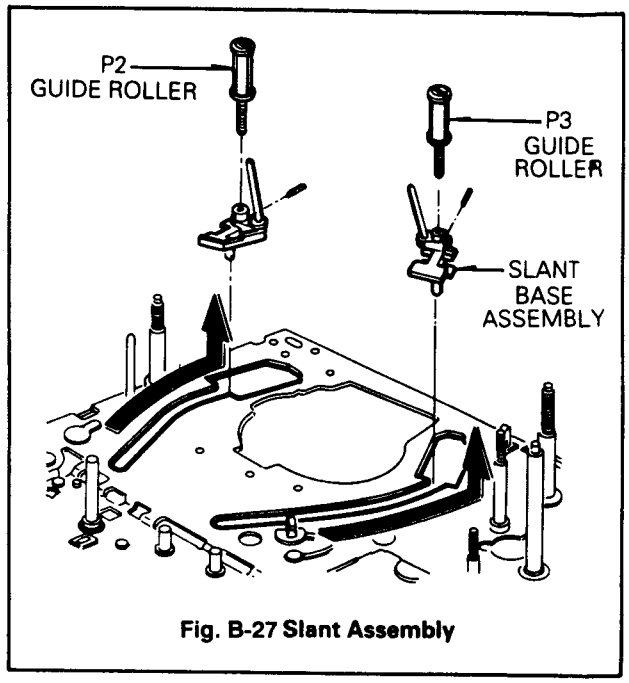


Fig. B-27 Slant Assembly

*** NOTE**

1) When disassembling and reassembling

① Use a Hexagonal wrench to remove set screw.
② Take notice that the P2 and P3 Slant Assembly should not be changed from their original place.

28. Loading Gear Assembly(L),(R) (Fig. B-28)

1) Remove the Cam Gear, Rack-T.
2) Remove the P2 and P3 Slant Assembly by turning the Loading Gear(L),(R) in the Loading direction
3) Lift up the Loading Gear Assembly(L),(R) from the Deck Mechanism Assembly.
4) Remove the Spring Load(L),(R).
5) Separate the Loading Gear(L), (R) from Arm Load(L), (R).

*** NOTE**

1) When reassembling

① Make sure that the Loading Gear(L) and (R) should not be changed from their original place.
② Align the groove of Loading Gear(L),(O) with the groove of Gear(R),(O).

VCR

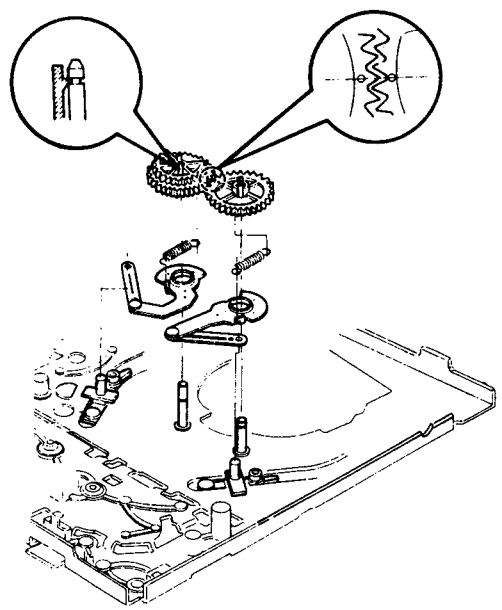


Fig. B-28 Loading Gear Assembly

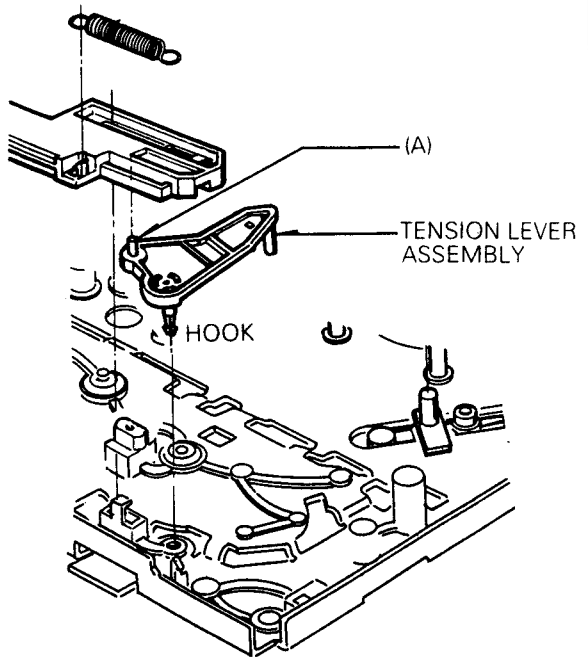


Fig. B-29 Tension Lever Assembly

29. Tension Lever Assembly(Fig. B-29)

1) Remove the Function Plate.
2) Remove the Tension Lever Assembly by pushing hooks inward.

*** NOTE**

1) When reassembling

① Set the part(A) of Tension Lever Assembly in the groove of Lower part of Function Plate.

② After reinstalling the Tension Lever Assembly, adjust the Tension Post and the Tension with a Tension Cassette.

30. Clutch Gear Assembly(Fig. B-30)

1) Remove the Pulley Gear.
2) Remove the Plate Function.
3) Remove the washer(A), and then remove the Clutch Gear Assembly.

*** NOTE**

1) When reassembling

① Do not disassemble the Clutch Gear Assembly any futher, because Torque adjustment can't be adjustible.

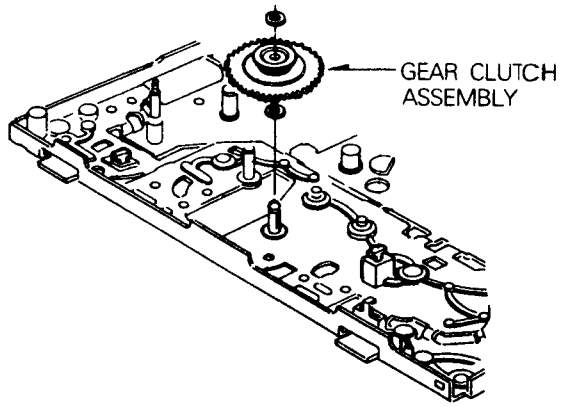
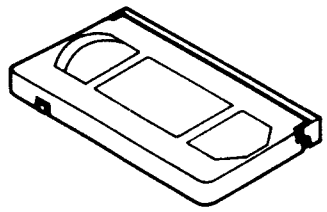
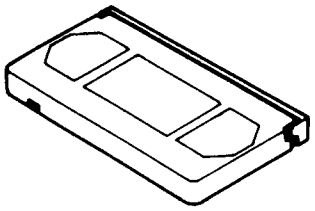
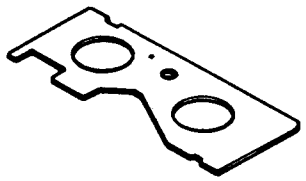
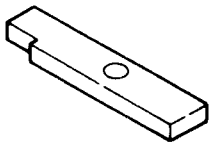
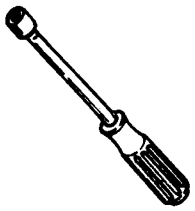


Fig. B-30 Gear Clutch Assembly

MECHANISM ADJUSTMENTS

• Tools and Fixtures for Deck

1. Back tension meter Parts No ; D00-D006 	2. NTSC alignment tape Parts No NTSC ; DTN-0001 PAL ; DTN-0002 	3. Master plane Parts No ; 960-011B 
4. Torque gauge Parts No ; D00-D00? 	5. Torque gauge adaptor Parts No ; D09-R001 	6. Reel table height jig Parts No ; D09-R003 
7. Post height adjusting driver Parts No ; DTL-0005 	8. M3 Nut driver Parts No ; DTL-0006 	

VCR

1. Mechanism State Switch(Mode Switch) Check

Purpose: To detect accurately the mechanism state and prevent the mechanism from malfunction.

Test Equipment/Fixture	VCR State	Check Point
● Blank tape	● Eject Mode (with cassette ejected)	● Mechanism state switch (Mode Switch and Cam)

Check Procedure

1) Turn the VCR on and eject the tape by pressing eject button.
2) Remove the Cabinet Top, the Main P.C.Board and the CST Housing. Then push the CST IN/OUT switch (Loca. #137) and eject button at the same time.
3) Turn the worm (Loca. #082) of Loading Motor Assembly (Loca. #A10) to the left side (counter-clockwise) to align the three holes (A) of the Pinch Gear, the P.C.Gear and the Chassis.
4) Remove the Bottom Cover and then check that the groove (V) and the hole (O) of Mode S/W are aligned each other. If the above alignment is not obtained, adjust as follows.
   (1) Remove the Bracket Assembly Bottom and the Capstan Belt in the state of power off.
   (2) Remove the P.C.B Assembly, align the groove (V) and the hole (O) of Mode S/W each other and then reassemble the P.C.B Assembly.
   (3) Turn the power on and perform the various operations to check that the loading and the unloading are correct.

Check Diagram

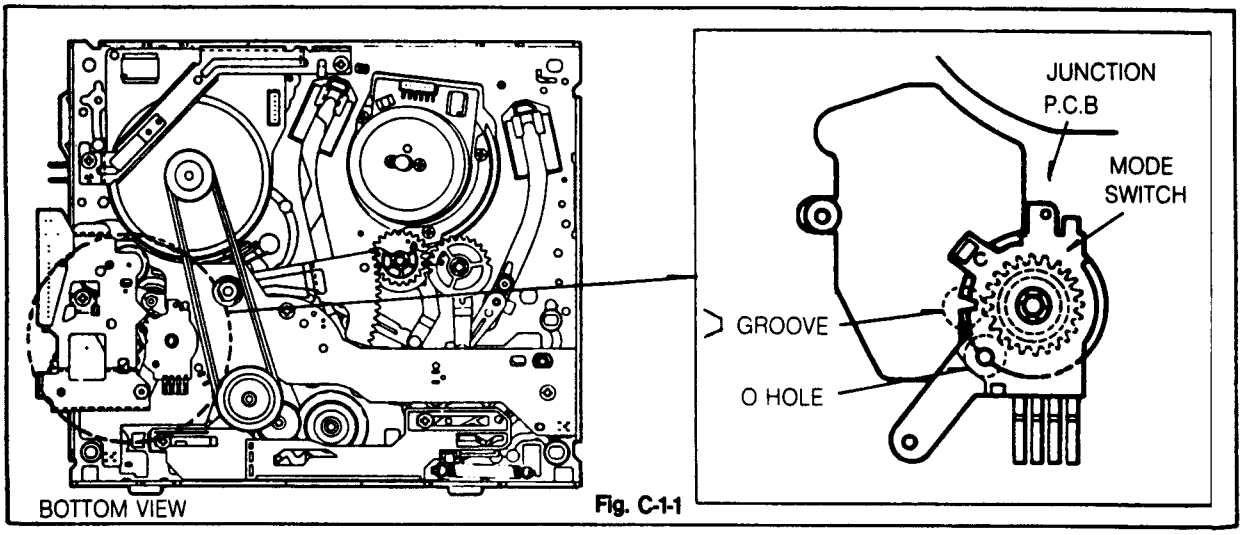


Fig. C-1-1

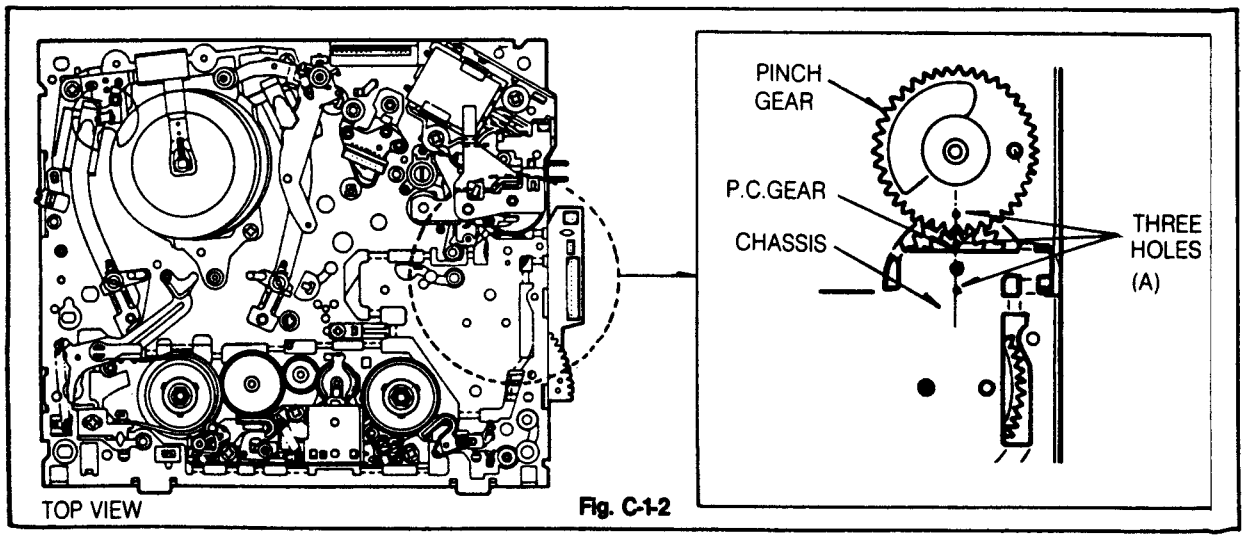


Fig. C-1-2

VCR

2. Preparation for Adjustment(To set VCR to the loading state without inserting a cassette)

1) Unplug the power cord from the AC outlet.
2) Remove the Cabinet Top and Front Loading mechanism.
3) Plug the power cord into the AC outlet.
4) Turn the VCR on and push the tact switch in the PCB Assembly.
   The VCR can accept input of each mode in this case. However the rewind and review operation cannot be performed for more than a few seconds because the take-up reel table is in the stop state and reel pulses cannot be detected.

(NOTE)
Always return the VCR to the Front Loading Mechanism Assembling State in the following order after the above operations have been performed.
1) Press the Eject button after turning the power on.
2) Wait for about 10 seconds until searching out the assembly position.
3) Assemble the Front Loading Mechanism and connect the Front Loading Mechanism Connector.
4) Refer to the "Front Loading Mechanism Disassembly" which is described previously.

3. Reel Table Height Adjustment

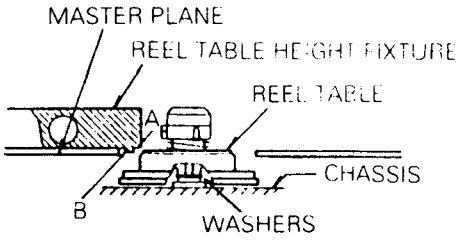
Purpose: To set the reels of the cassette to the specified height, thus determine the height of tape.

Test Equipment/Fixture	Preparation for adjustment	VCR State	Adjustment Points
● Maseter Plane ● Reel Table Height Fixture	1) Remove the Front Loading Mechanism 2) Mount the Master Plane and place the Reel Table Height Fixture on it.		● Washer under the Supply and Take Up Reel Tables

Adjustment procedure
1) Check that the Reel Table is between sections A and B of the Reel Table Height Fixture.
2) If the table is not between sections A and B of the Fixture, replace the washers(two types, 0.3mm and 0.5mm thick) in the Reel Table or adjust them.

****CAUTION****
When the Tension Arm and Tension Band are removed, adjust the tension post position and tension after reinstalling them.

Adjustment Diagram



SUPPLY AND TAKE-UP REEL TABLE

Fig. C-3

VCR

4. Tension Post Position and Tension Adjustment

Purpose: To make the tension of tape constant so that the contact between the video heads and tape is stabilized.

Test Equipment/Fixture	VCR State	Adjustment Point
● Tension Meter (Tension adjustment)	● Play without cassette and with a Tension Meter	● Holder Band(B)

Adjustment Procedures

〈Position Adjustment〉

1) Perform loading without inserting a tape and loosen the screw that attaches the Holder Band(B) to the Deck Mechanism Assembly.
2) Insert the (-)type driver between the Holder Band(B) and the "V" groove of the chassis.
3) Move the Holder Band(B) right and left and align the center of tension post(Guide T-Post) with the center of P1(Shaft P1).(tolerance:Less than ±0.3mm)
4) Tighten the screw that attaches the Holder Band(B) to Deck Mechanism Assembly.

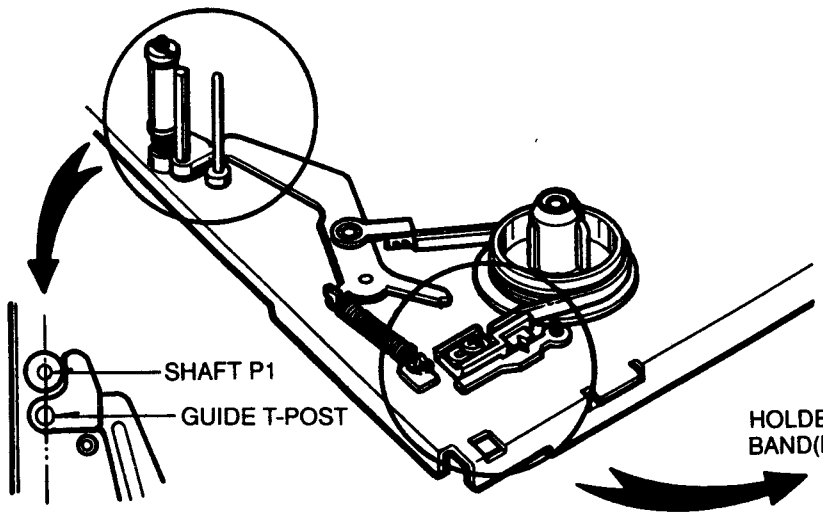
〈Tension Adjustment〉

1) Play the Tension Meter and read the Tension Meter: 38g•cm±4g•cm(reference value).
2) If the result is abnormal.
   (1) over the standard:loosen the screw, move the Holder Band(B) to the right a little and then tighten the screw and make sure that this adjustment is correct.
   (2) below the standard:loosen the screw, move the Holder Band(B) to the left a little and then tighten the screw and make sure that this adjustment is correct.

****CAUTION****

The range of movement of Holder Band(B) should be within ±1.5mm while being adjusted.
If the range is over, you should recheck the Reel Brake, Tension Arm and Spring.

Adjustment Diagram



ALIGN THE CENTER OF P1 AND TENSION POST

Fig. C-4-1

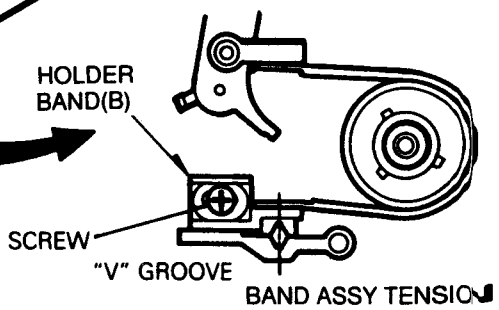


Fig. C-4-2

VCR

5. Checking Torque

Purpose: It is necessary to check the tension, torque and compression force at the tape take-up section and moving section to make the tape run smoothly and satisfy the basic performance of the VCR. Check these if the tape does not run smoothly or the tape speed is abnormal.

Test Equipment/Fixture	VCR state
● Torque Gauge ● Torque Gauge Adaptor ● Cassette Torque Meter SRK-VHT-063 : Play, Cue SRK-VHT-303 : Review	● Set the VCR to each operation mode without inserting a cassette. (See '2 Preparation for Adjustment')

Item	VCR Operation mode	Measurement Reel	Measurement Values
Main brake torque.	Eject	Supply and take-up reels	600g.cm or more
Slack removal torque	Unloading(power off)	Supply reel	120~220g·cm
Fast forward torque	Fast forward	Take-up reel	600g·cm or more
Rewind torque	Rewind	Supply reel	600g·cm or more
Play take-up torque	Play	Take-Up reel	90~150g·cm
Review Torque	Review	Supply Reel	120~180 g.cm
CUE Torque	Cue	Take-Up Reel	110~170 g.cm

Checking Method

The values are measured by using a torque gauge and torque gauge adaptor with the torque gauge fixed.

Note: This value is measured when the VCR is shifted in the unloading direction from the fast forward or rewind mode and quick braking is applied to both Reel Tables.

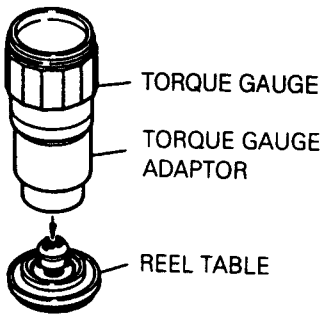


Fig. C-5

VCR

6. Guide Post Height Adjustment

Purpose: To control tape height

Test Equipment/Fixture	VCR State	Adjustment Point
● Master Plane ● Blank Tape ● Reel Table Height Fixture ● Post Height Adjusting Driver ● M3 Nut Driver	● Mount the Master Plane and place the Reel Table Height Fixture on it.	● Nuts on Impedance Roller ● Guide Post

1) Set the clearance between the bottom of the P1 Roller Flange and under cut of Reel Table Height Jig to 0~0.1mm(Fig. C-6-1)
2) Set the clearance between the bottom of the Guide Post upper flange and top of the Reel Table Height Fixture to 0~0.2mm(Fig. C-6-2).
3) Load and run the Tape and check that the tape does not ride over the upper and lower flanges of the guide post and lower flange of Impedance Roller.
4) If the tape rides over either flange, adjust the height of P1 Roller and Guide Post as follows(Fig. C-6-3).
   - If the tape rides over the upper flange, turn the nut counterclockwise.
   - If the tape rides over the lower flange, turn the nut clockwise.

Adjustment Diagrams

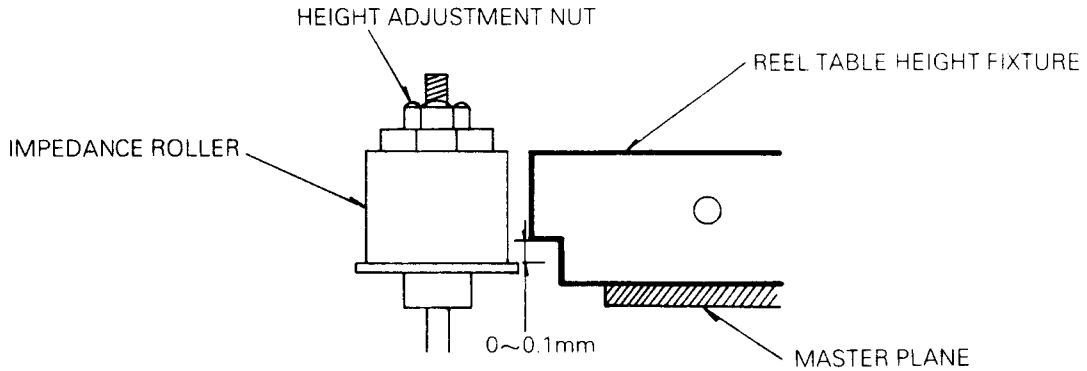


Fig. C-6-1

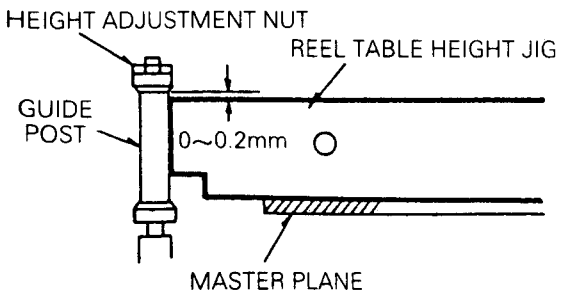


Fig. C-6-2

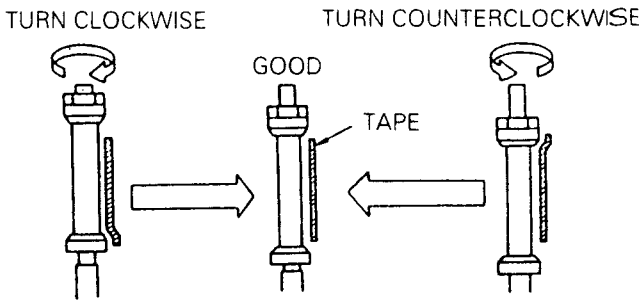


Fig. C-6-3

VCR

7. Guide Roller Height Adjustment

Purpose: To regulate the height of tape so that the bottom of tape runs along the tape guide line on the lower drum.

A. Coarse Adjustment

Test Equipment/Fixture	VCR State	Adjustment Point
● Hexagonal Wrench or Bended Drive (+) Type ● Post Height Adjusting Driver	● Play an alignment tape	● Guide Roller Height Adjustment Screws on the Supply and Take-Up. Guide Rollers.

Adjustment Procedure

1) Perform the precise adjustment.
2) When the Guide Roller is damaged, release the Guide Roller retaining screw and then replace the Guide Roller.

Adjustment Diagram

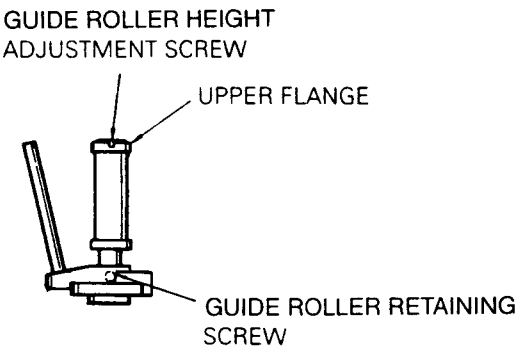


Fig. C-7-1

B. Precise Adjustment

Test Equipment/Fixture	Test Equipment Connection Points	VCR State	Adjustment Point
● Oscilloscope ● Post Height Adjusting Driver ● Alignment Tape(30HMP-2) ● Hexagonal wrench	● CH-1:PB RF Envelope ● CH-2 (NTSC : SW30Hz / PAL : SW25Hz) ● Head Switching Output Point ● RF Envelope Output Point	● Play an alignment tape	● Guide Roller Height Adjustment Screws.

Adjustment Procedure

1) Play an alignment tape after connecting the probe of the oscilloscope to RF Envelope Output Test Point and Head Switching Output Test Point.
2) Tracking control(in PB mode):Center position(When this adjustment is performed after the drum assembly has been replaced, set the tracking control so that the RF output is maximum.)
3) Height adjustment screw:Flatten the RF waveform.
4) Turn(Move) the tracking control(playback) clockwise and counterclockwise.(to the right and left)
5) Check that any drop of RF output is uniform at the start and end of the waveform.

****CAUTION****
If the adjustment is excessive or insufficient the tape is jammed or folded.

Waveform Diagrams

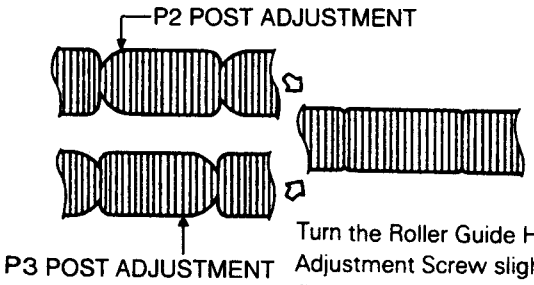
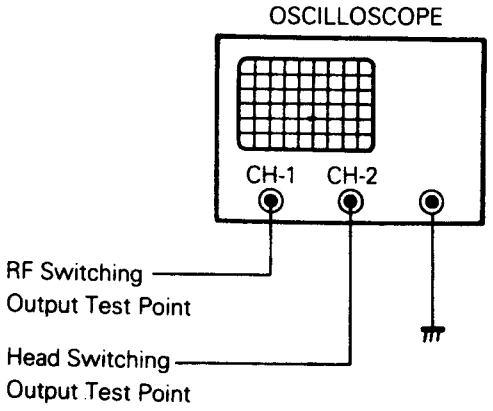


Fig. C-7-2

Tracking control at center — Turn(Move) the tracking control to both directions.

Fig. C-7-3

Connection Diagram



VCR

8. Audio/Control(A/C) Head Adjustment

Purpose: To keep the contact between the tape and head so that the specificed track is recorded and played back.

A. Coarse Adjustment (Perform the preliminary adjustment, when there is no Audio Output signal with alignment tape.)

Test Equipment/Fixture	VCR State	Adjustment Points
● M3 Nut Driver		● Special screw ● Cone Point Screw for tilt ● Azimuth Adjustment Screw
● Blank tape	● Run the blank tape	● A/C Head Adjuster

Adjustment procedure/Adjustment Diagram

1) Tighten the special screw so that the spring section protrudes 6.4mm(approx.) over the top of Head Base (1).

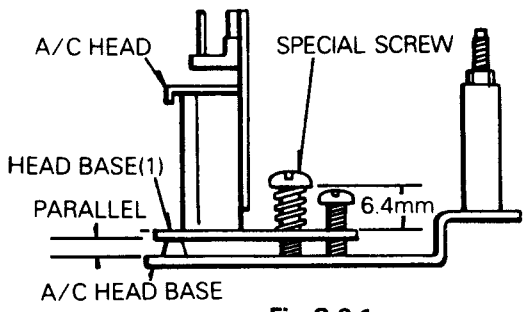


Fig. C-8-1

2) Turn the Azimuth Adjustment Screw and Cone Point Screw so that the Head Base(1) and A/C Head Base are parallel.

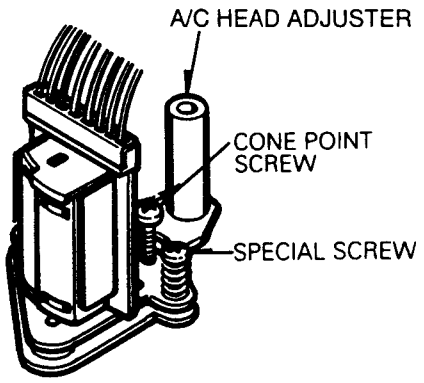


Fig. C-8-2

3) Load a blank tape and set the VCR to the play mode.

4) Confirm that the tape runs fittingly to the lower limit of the P4 post. Also confirm that the tape runs smoothly.

5) If adjustment is required, turn Cone Point Screw clockwise until curling is apparent at the lower edge of P4. Then turn Cone Point Screw counterclockwise until the curling smooths out.

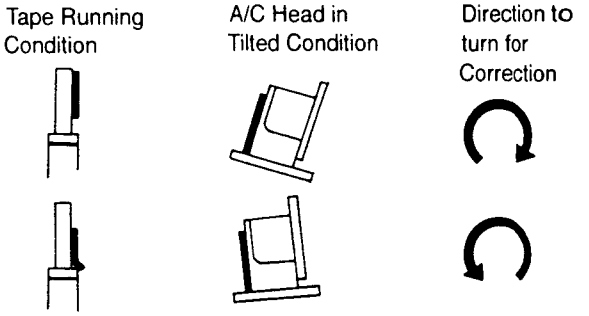


Fig. C-8-3

6) Check that there is no conspicuous curling and folding around the A/C head. If there is conspicuous curling or folding, readjust the Cone Point Screw, Azimuth Adjustment Screw and A/C Head Adjuster. When the bottom edge of tape is 0.20~0.25mm from the bottom edge of the control head's core, the height of A/C head is ideal.

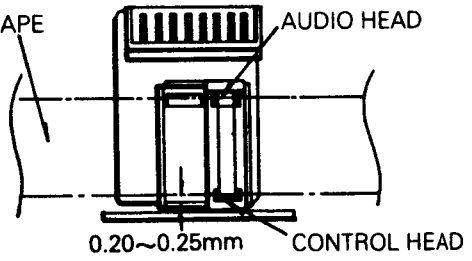


Fig. C-8-4

7) If necessary repeat steps 1 through 4 until a precise adjustment is achieved.

VCR

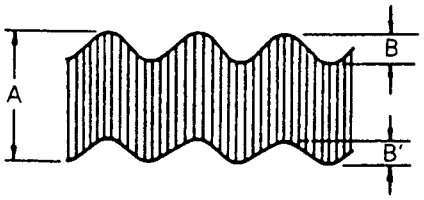
B. Precise Adjustment

Test Equipment/Fixture	Test Equipment Connection Point	VCR State	Adjustment Points
● Oscilloscope ● Alignment tapes ● M3 Nut Driver	● Audio output jack	● Play an alignment tape 1KHz, 7KHz sections	● Azimuth Adjustment Screw ● A/C Head adjuster ● Cone point screw

Adjustment Procedure

1) Connect the probe of oscilloscope to audio output jack.
2) Adjust the Azimuth Adjustment Screw, A/C Head adjuster and cone point screw slightly and alternately so that an Audio 1KHz output is maximum and flat. (minimum fluctuation).
3) Adjust the Azimuth Adjustment Screw slightly and alternately so that the Audio 7KHz output is maximum.

Waveform Diagram



A:Maximum BB':Minimum

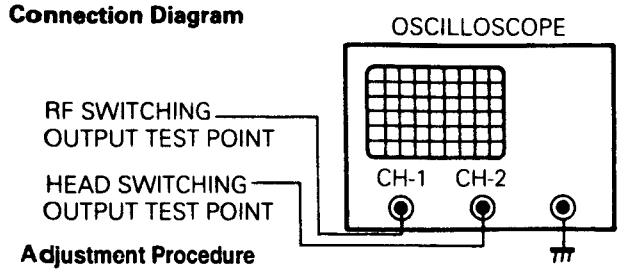
Fig. C-8-5

9. X-Value Adjustment

Purpose: To obtain compatibility with other VCRs.

Test Equipment/Jigs	Test Equipment Connection Points	VCR State	Adjustment Points
● Oscilloscope ● Alignment tapes ● Post Height Adjusting Driver	● CH-1:PB RF Envelope ● CH-2:SW 30Hz ● Head Switching Output Test Point ● RF Envelope Output Test Point	● Play an alignment tape	● Adjust X

Connection Diagram



Adjustment Procedure

1) Insert a cassette tape, and then "AUTO TRACKING" will be displayed on the Digitron, then push the Tracking ⊕ or ⊖ Keys one time as soon as possible to make the VCR release the Auto Tracking.
2) Turn the Adjust X to the maximum RF Envelope level when the VCR is free from the Auto tracking.
3) If RF envelope output is maximized from the center click position in the right direction (clockwise), set the tracking control to the center and turn the X Adjust counterclockwise.
4) If in the left direction (counterclockwise), turn it clockwise by the same method.
5) In case of the 30 μm, head will trace over a 60 μm width track, readjust it so that RF Envelope output begins falling at the same angle when tracking control is turned either left or right.

Adjustment Diagram

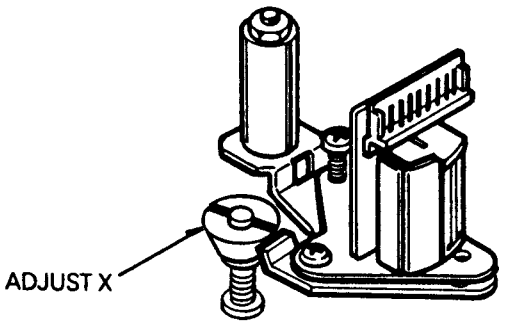


Fig. C-9

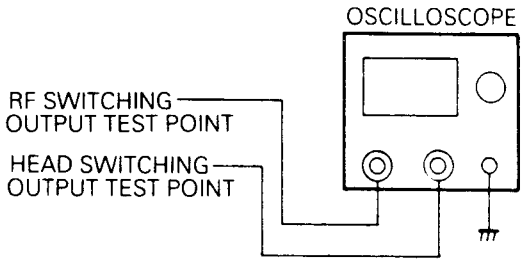
VCR

10. Adjustment after Replacing Drum Assembly(Video Heads)

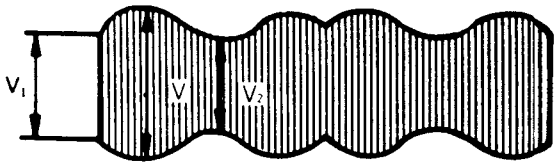
Purpose: To suppress drift in the height relative to the Guide Roller and drift of the X Value after replacing the drum.

Test Equipment/Fixture	Test Equipment Connection Points	VCR State	Adjustment Points
● Oscilloscope ● Post Height Adjusting Driver ● Alignment tape ● Blank tape ● M3 Nut Driver	Checking the flatness ● CH-1 : PB RF Envelope ● CH-2 (NTSC : SW30Hz / PAL : SW25Hz) ● Head Switching Output Point ● RF Envelope Output Point	● Run the blank tape ● Play an alignment tape	● Guide Rollers Precise Adjustment ● Switching point ● Tracking point ● X-Value

Connection Diagram



Waveform Diagram



V_1/V MAX $\geq$ 0.7
V_2/V MAX $\geq$ 0.8
RF ENVELOPE OUTPUT

Checking/Adjustment Procedure

1) Run the blank tape, check and adjust whether the Roller Guide is curling or creasing tape around the Roller Guide.
2) Check the RF envelope output flatness and adjust the Roller Guide Height while playing an alignment tape
3) Adjust the head switching point.
4) Check that RF envelope output is maximum when the tracking is at the initial position.
5) Adjust the Tracking Preset and X-Value Adjust with X Adjust.

Fig. C-10

11. Check of Tape Travel After Reassembling Deck Assembly

Check Audio and RF Locking Time during playback after CUE or REV.

Test Equipment/Fixture	Specification	Test Equipment Connection Point	VCR State
● Oscilloscope ● Alignment tape (with 6H 3kHz Color Bar Signal) ● Stop Watch	● RF Locking Time : Less than 5 sec. ● Audio Locking Time : Less than 10 sec.	● CH-1 : PB RF Envelope ● CH-2 : Audio Output ● RF Envelope Output Point ● Audio Output Jack	● Play an alignment tape (with 6H 3kHz Color Bar Signal)

Checking Procedure

1) Change the mode of CUE or REV to play.
2) At this time, confirm that the Locking Time of Audio and RF Output Waveform fits to specification.
3) If the results checked above are abnormal, reapeat adjustments 4 through 8.

※ 6H : LP

VCR

Check the coincidence of both Audio and Video Sync.(Lip Sync.)

Test Equipment/Fixture	Specification	Test Equipment Connection Point	VCR State
● Oscilloscope ● 2H 9V Tape(for X-Value Adjustment Coincidence) or alignment tape	● Less than ±0.5V	● CH-1 : PB RF Envelope ● CH-2 : Audio Output ● RF Envelope Output Point ● Audio Output Jack	● Play a 2H 9V tape or an alignment tape.

Checking Procedure

1) Confirm that the period Ⓐ of Fig. C-9-1 is within ± 0.5V.
2) If the result is abnormal, repeat adjustment #7. (X-Value adjustment).

※ 2H : SP, V: Vertical

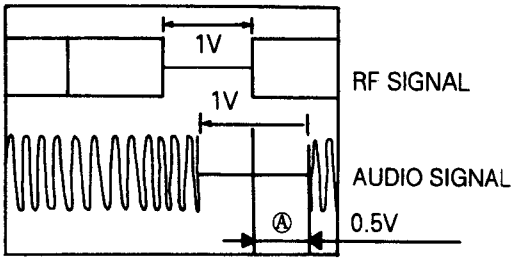


Fig. C-11-1

Check the occurance of tape curl and jam

Test Equipment/Fixture	Specification	VCR State
● T-160 Tape ● T-120 Tape	● Be sure there is no jam or curl at the beginning, the middle period or the end of the T-160 tape.	● Run the CUE, REV play mode at the beginning and the end of the tape.

Checking Procedure

1) Confirm whether the state of each transportation post is normal.
2) Make sure nothing is wrong with the operation of the Counter, when the lower part of tape is folded.
3) Be sure there is nothing wrong in the Audio signal, when the upper part of tape is folded.
4) If the result is abnormal, repeat adjustment #5 and #6.

Check the adjustment state of Take-Up Guide

Test Equipment/Fixture	Specification
● T-120 Tape ● Take-Up Guide Adjusting Driver	● Review : Travel the tape that align the top of the P4 Guide and the bottom of the Tape or be folded. ● Play : Travel the tape that align the top of the P4 Guide and the bottom of the Tape.

Checking Procedure

1) Run the CUE or PLAY mode at the middle period or the end of the T-120 tape.
2) Run the REV mode at the play or cue part of tape.
3) At this time, confirm that the change of tape height at the P4 Guide fits to specification.
4) If the result is abnormal, refer to Table 9-1.
5) Play the beginning of T-120 tape(within 5 min.)
6) Confirm that the state of tape transportation fit to specification in P4 Guide.
7) Remove the Tension Arm Assembly by rotating in the clockwise direction and then confirm that the state of tape transportation fit to specification.
8) If the result is abnormal, refer to Table 9-1.

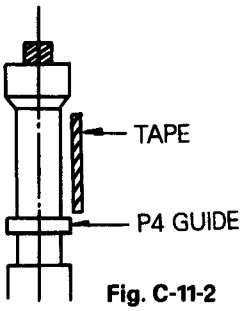


Fig. C-11-2

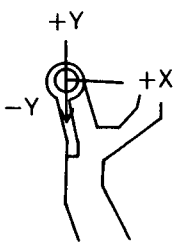


Fig. C-11-3

PLAY Mode	REV Mode	Adjustment Method
Tape Falling	Tape Lift	Bend the shaft of the direction +Y.
Tape Lift	Tape Falling	Bend the shaft of the direction -Y.

Table 11-1

VCR

12. Maintenance/Inspection Procedure

(1) Required Maintenance

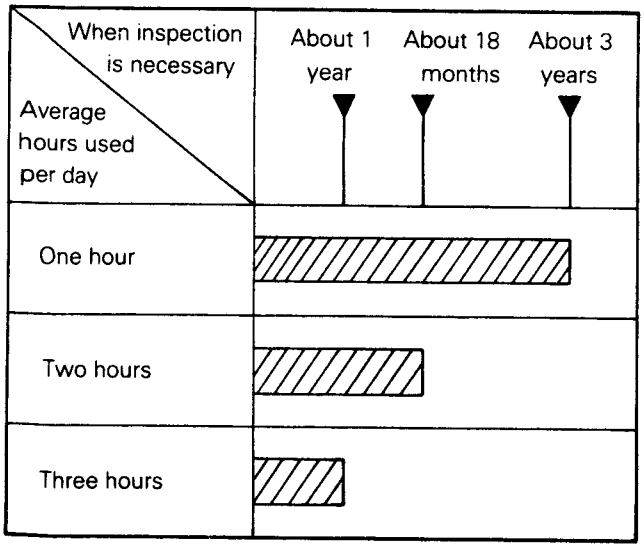
The recording density of a VCR is much higher than that of an audio tape recorder. VCR components must be very precise, at tolerances of 1/1000mm, to ensure compatiblity with other VCRs. If any of these components are worn or dirty, the symptoms will be the same as if the part is defective. To ensure good picture, periodic inspection and maintenance, including replacement of worn out parts and lubrication, are necessary.

(2) Scheduled Maintenance

Schedules for maintenance and inspection are not fixed because they vary greatly according to the way in which the customer uses the VCR, and the environment in which the VCR is used.

But, in general home use, a good picture will be maintained if the inspection and maintenance is made every 1,000hours. The table below shows the relation between time used and inspection period.

Table 1



(3) Check before starting repairs

The following faults can be remedied by cleaning and oiling. Check the needed lubrication and the conditions of cleanliness in the unit.

Check with the customer to find out how often the unit is used, and then determine that the unit is ready for in spection and maintenance. Check the following parts.

Table 2

Poor S/N, no color	Dirt on video head or worn video head
Tape does not run or tape is slack	Dirt on pressure roller, belt or flywheel belt
Vertical jitter, horizontal jitter	Dirt on video head or in tape transport system
Color beats	Dirt on full-erase head
Low volume or sound distorted	Dirt on audio/control head
Fast forward or rewind is not done or rotation is slow	Dirt on belt

(4) Supplies Required for Inspection and Maintenance

(1) Greases Kanto G-31(or equivalent)
(2) Alcohol (Isopropyl Alcohol)
(3) Cleaning Patches

(5) Maintenance Procedure

5-1) Cleaning

(1) Cleaning video head

First use a cleaning tape. If dirt on head is too stubborn to remove by tape, use the cleaning patch. Coat the cleaning patch with alcohol(Isopropyl Alcohol) to the point indicated. Touch the cleaning patch to the head tip and gently turn the head(rotating cylinder) right and left.

(Do not move the cleaning patch vertically and make sure that only the buckskin on the cleaning patch comes into contact with the head. Otherwise, the head may be damaged.)

Thoroughly dry the head. Then run test tape. If alcohol (Isopropyl Alcohol) remains on the video head, the tape may be damaged when it comes into contact with the head surface.

(2) Clean the tape transport system and drive system, etc, by wiping with a cleaning patch wetted with alcohol (Isopropyl Alcohol).

Note:

① It is the tape transport system which comes into contact with the running tape. The drive system consists of those parts which move the tape.

② Make sure that during cleaning you do not touch the tape transport system with the tip of a screw driver and no force is applied to the system that would cause deforming.

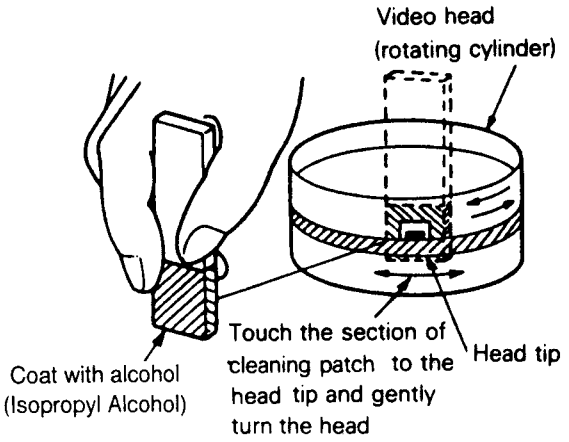


Fig. C-12-1

5-2) Greasing

(1) Greasing guidelines

Apply grease, with a cleaning patch. Do not use excess grease. It may come into contact with the tape transport of drive system. Wipe any excess and clean with cleaning patch wetted in alcohol(Isopropyl Alcohol).

(2) Periodic greasing

Grease specified locations every 5,000hours.

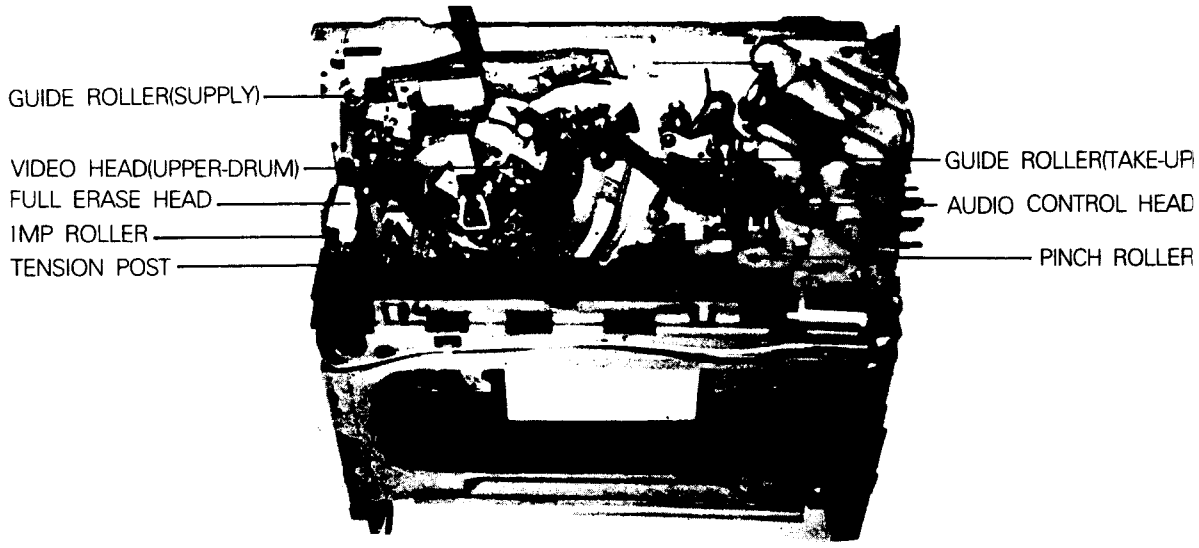


Fig. C-12-2 Tape Transport System

Phenomenon	Inspection	Replacement	
Color beats	Dirt on full-erase head	○	→ ①
Poor S/N no color	Dirt on video head	○	→ ②
Vertical jitter	Dirt on video head Dirt in tape transport system	○	→ ③
Low volume, Sound distorted	Dirt on audio/control head	○	→ ④
Tape does not run. Tape is slack	Dirt on pinch roller	○	→ ⑤

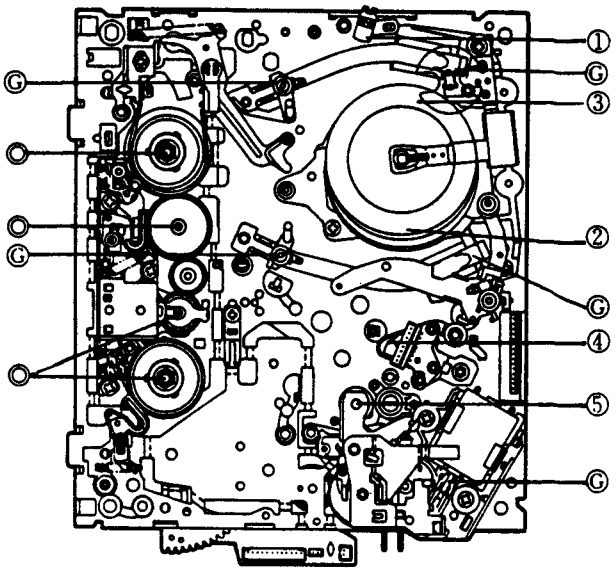


Fig. A-13 Top View of Mechanism

Phenomenon	Inspection Location	Replacement	
Do not fast forward or rewind, or rotation is slow Tape does not run Slack tape	Dirt on reel belt	○	→ ⑥

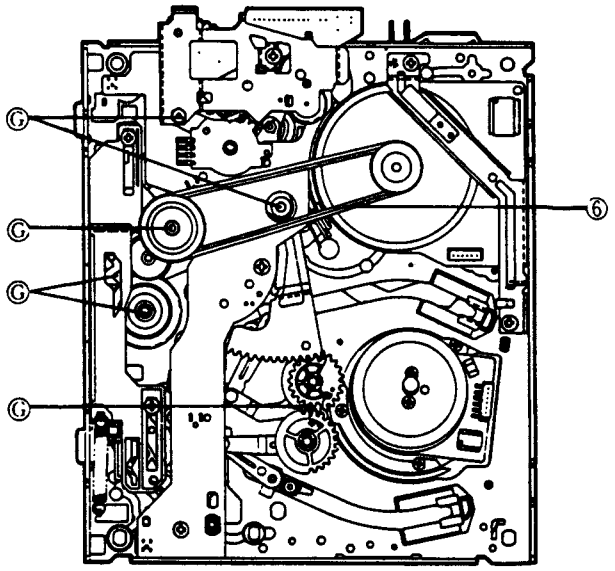


Fig. A-14 Bottom View of Mechanism

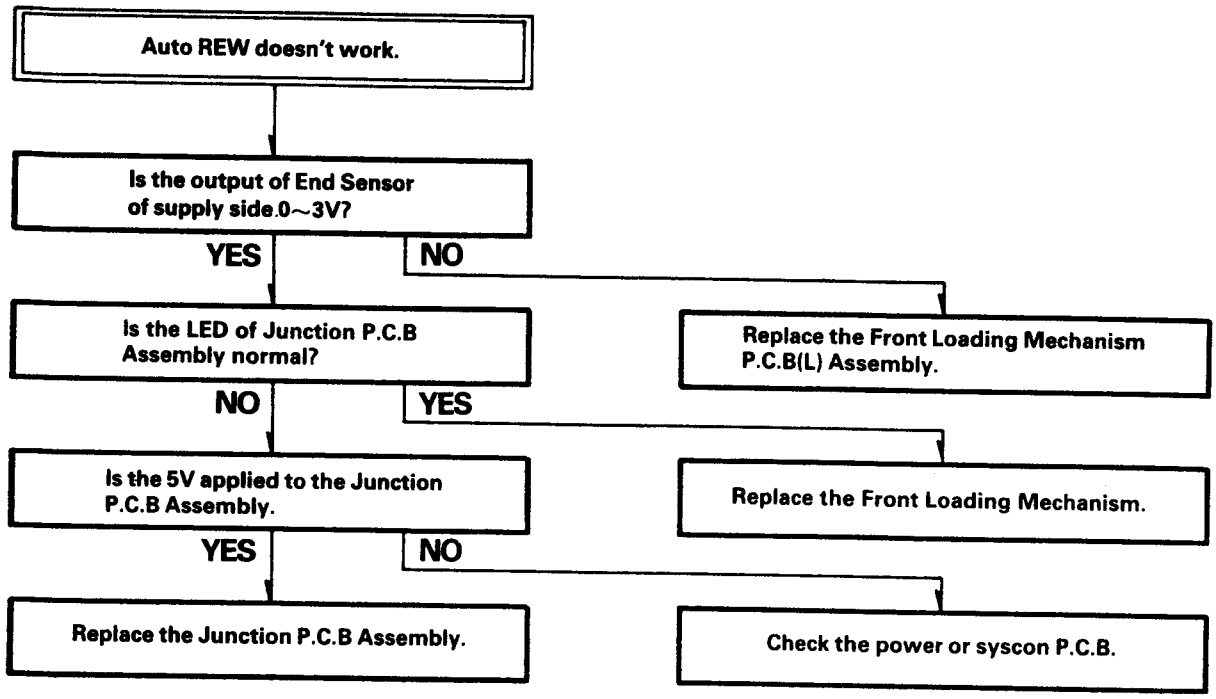
Note: If locations marked with ○ do not operate normally after cleaning, check for wear and replace.
See the EXPLODED VIEWS at the end of this manual as well as the above illustrations for the sections to be lubricated and greased.

Ⓖ:Grease
Ⓞ:Oil

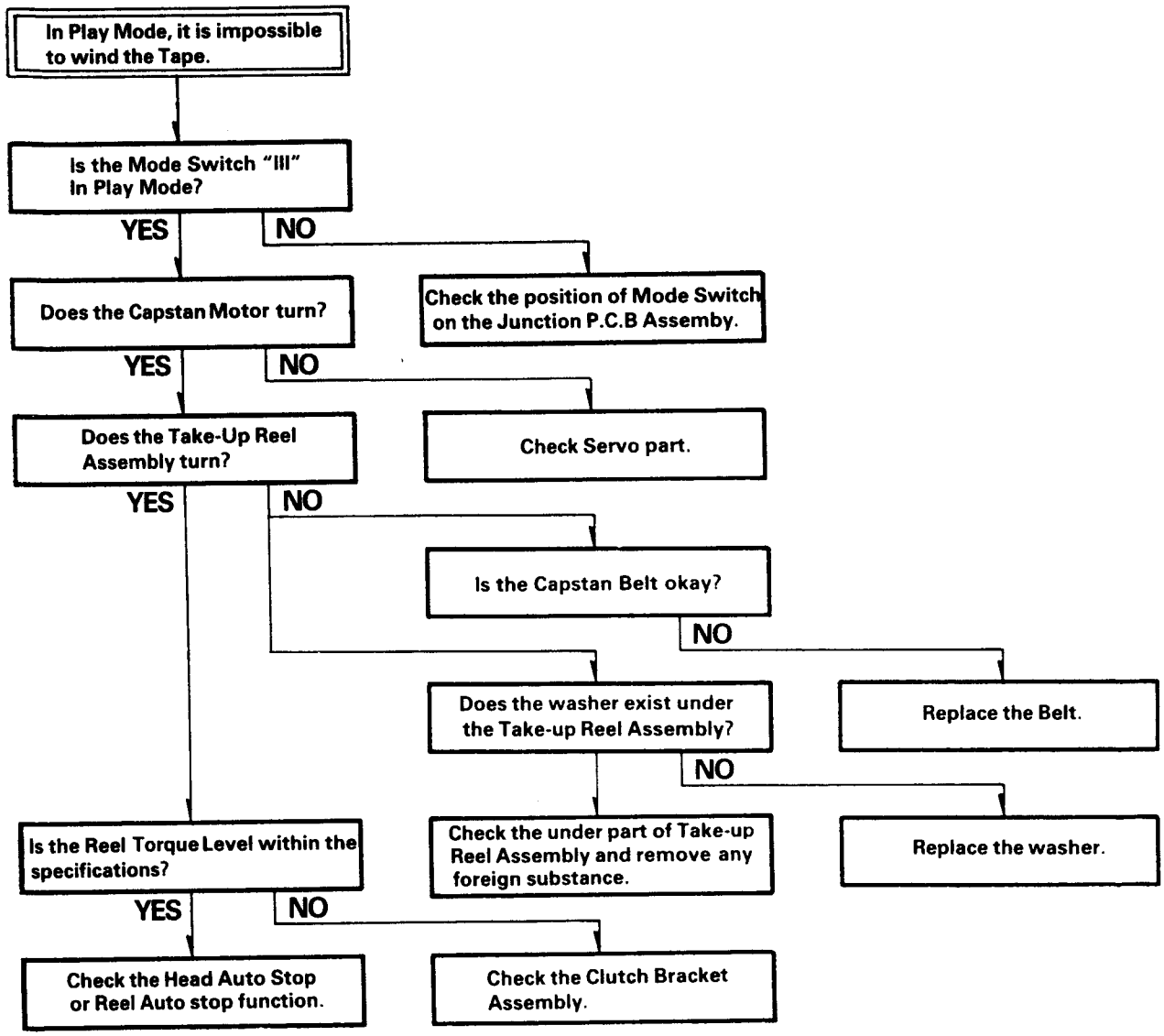
VCR

MECHANISM TROUBLESHOOTING GUIDE

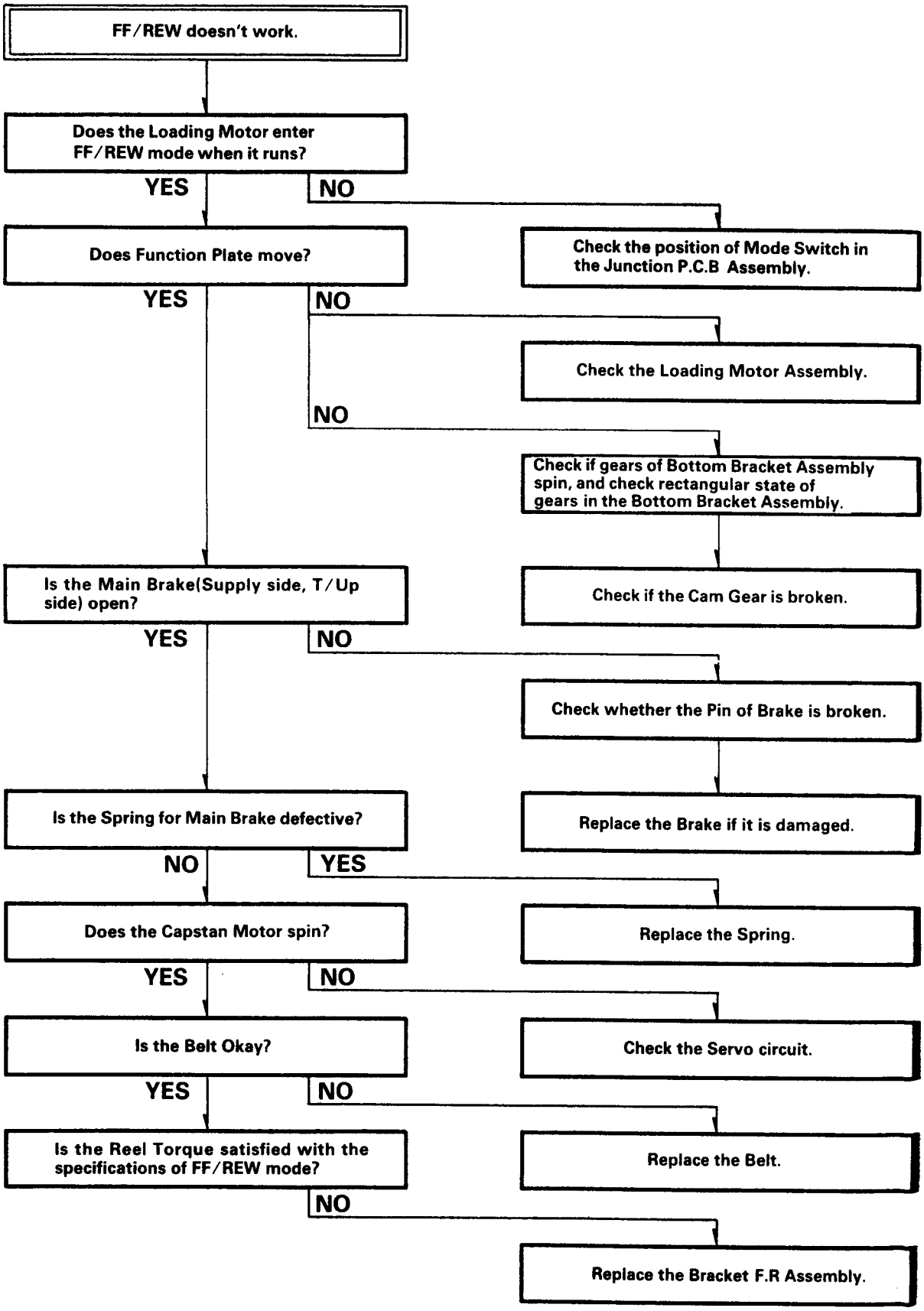
1. Deck Mechanism


Auto REW doesn't work.
Is the output of End Sensor of supply side.0~3V?
YES
NO
Is the LED of Junction P.C.B Assembly normal?
Replace the Front Loading Mechanism P.C.B(L) Assembly.
NO
YES
Is the 5V applied to the Junction P.C.B Assembly.
Replace the Front Loading Mechanism.
YES
NO
Replace the Junction P.C.B Assembly.
Check the power or syscon P.C.B.

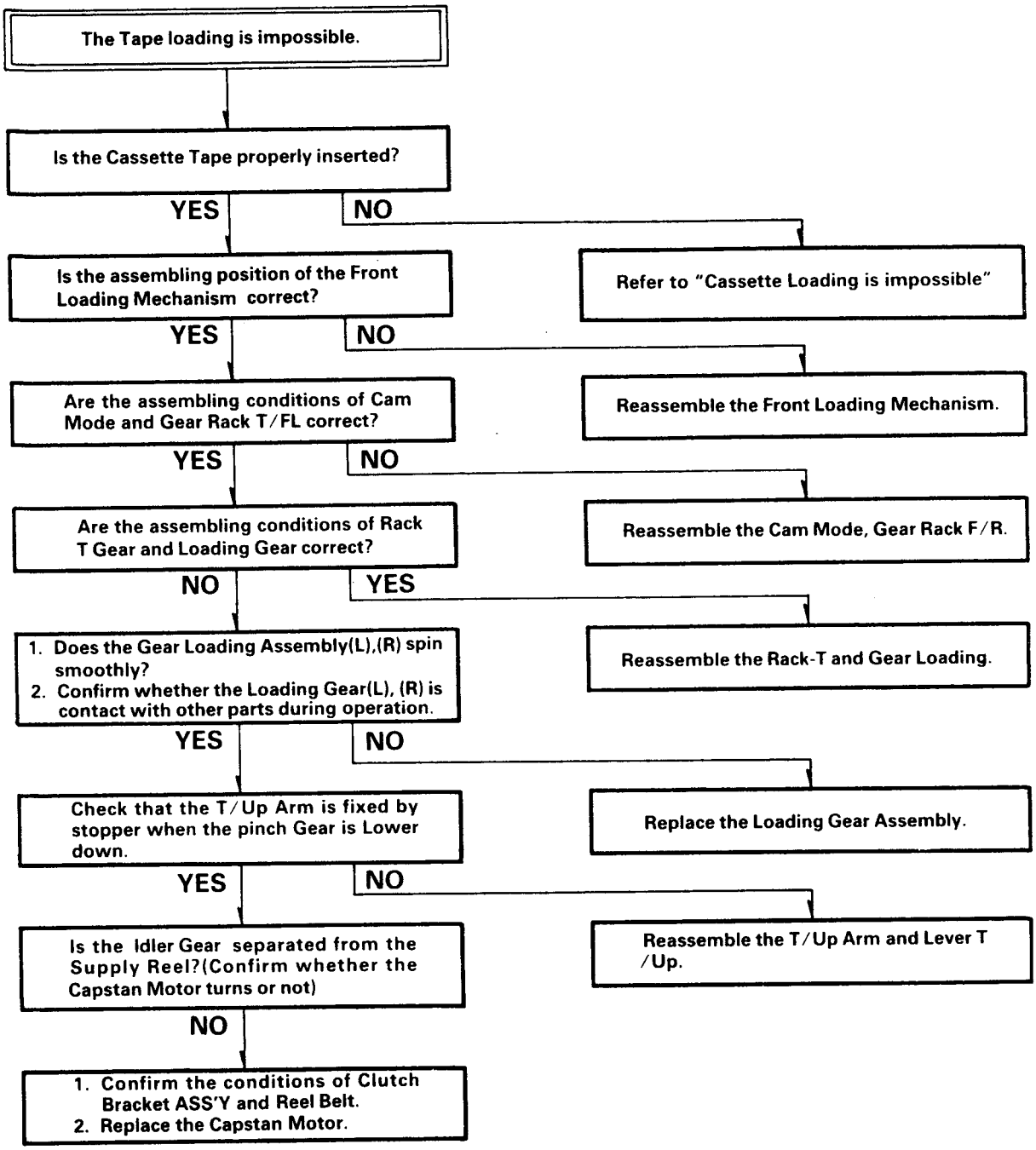
B.


In Play Mode, it is impossible to wind the Tape.
Is the Mode Switch "III" In Play Mode?
YES
NO
Check the position of Mode Switch on the Junction P.C.B Assemby.
Does the Capstan Motor turn?
YES
NO
Check Servo part.
Does the Take-Up Reel Assembly turn?
YES
NO
Is the Capstan Belt okay?
NO
Replace the Belt.
Does the washer exist under the Take-up Reel Assembly?
NO
Replace the washer.
Check the under part of Take-up Reel Assembly and remove any foreign substance.
Is the Reel Torque Level within the specifications?
YES
NO
Check the Head Auto Stop or Reel Auto stop function.
Check the Clutch Bracket Assembly.

C.

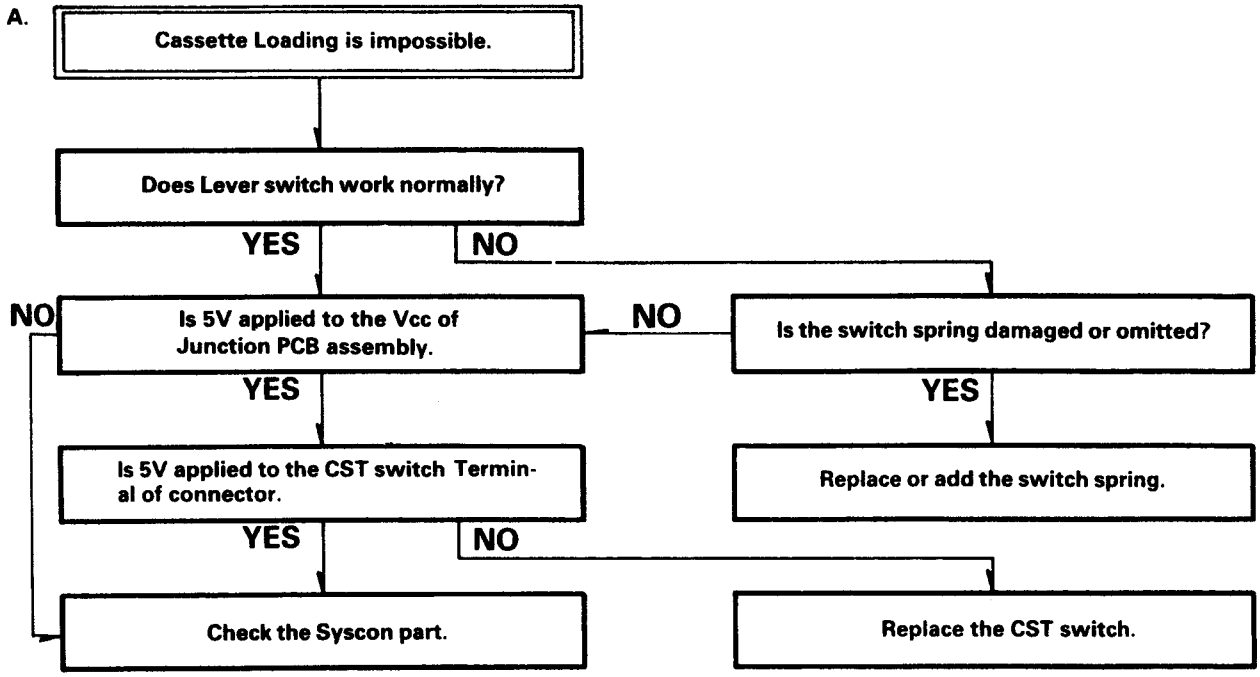

FF/REW doesn't work.
Does the Loading Motor enter FF/REW mode when it runs?
YES
NO
Does Function Plate move?
Check the position of Mode Switch in the Junction P.C.B Assembly.
YES
NO
Check the Loading Motor Assembly.
NO
Check if gears of Bottom Bracket Assembly spin, and check rectangular state of gears in the Bottom Bracket Assembly.
Is the Main Brake(Supply side, T/Up side) open?
Check if the Cam Gear is broken.
YES
NO
Check whether the Pin of Brake is broken.
Is the Spring for Main Brake defective?
Replace the Brake if it is damaged.
NO
YES
Does the Capstan Motor spin?
Replace the Spring.
YES
NO
Is the Belt Okay?
Check the Servo circuit.
YES
NO
Is the Reel Torque satisfied with the specifications of FF/REW mode?
Replace the Belt.
NO
Replace the Bracket F.R Assembly.

D.

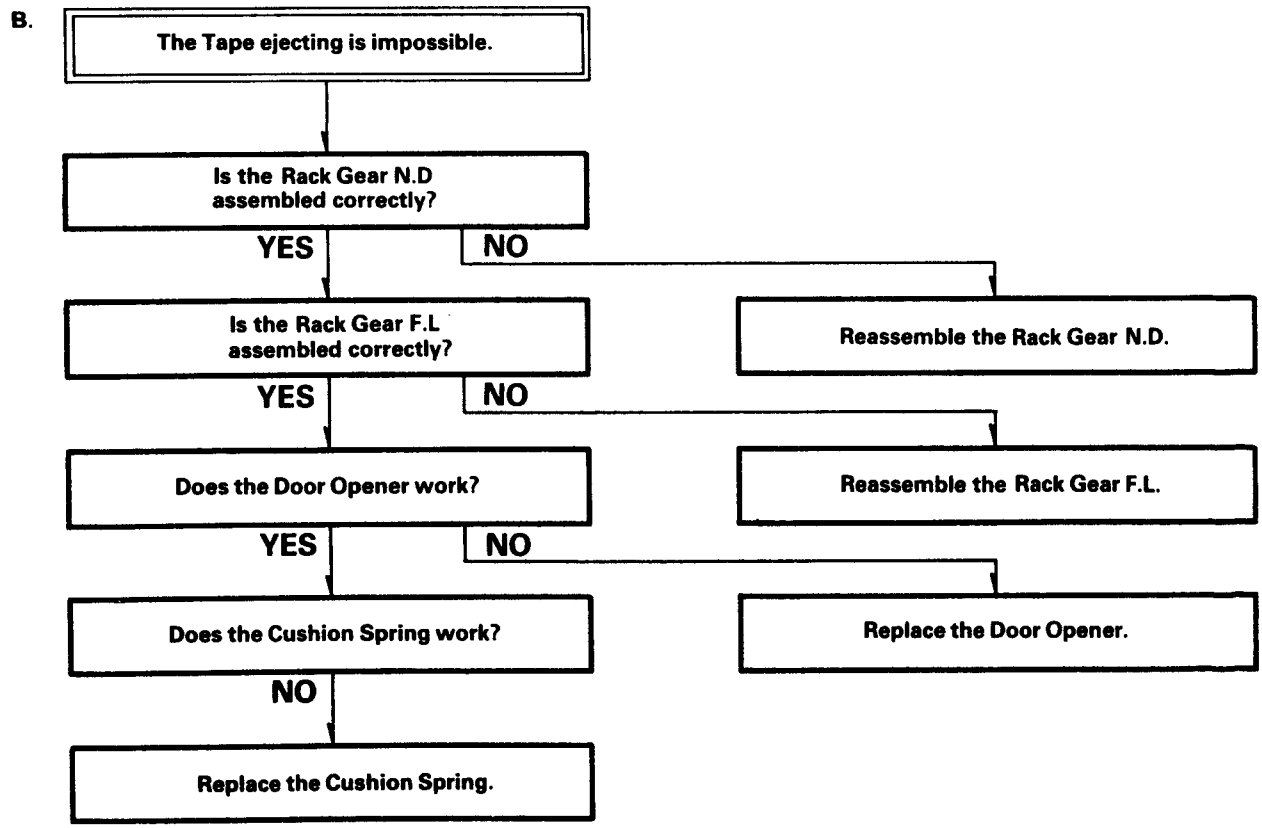

The Tape loading is impossible.
Is the Cassette Tape properly inserted?
YES
NO
Refer to "Cassette Loading is impossible"
Is the assembling position of the Front Loading Mechanism correct?
YES
NO
Reassemble the Front Loading Mechanism.
Are the assembling conditions of Cam Mode and Gear Rack T/FL correct?
YES
NO
Reassemble the Cam Mode, Gear Rack F/R.
Are the assembling conditions of Rack T Gear and Loading Gear correct?
NO
YES
Reassemble the Rack-T and Gear Loading.
1. Does the Gear Loading Assembly(L),(R) spin smoothly?
2. Confirm whether the Loading Gear(L), (R) is contact with other parts during operation.
YES
NO
Replace the Loading Gear Assembly.
Check that the T/Up Arm is fixed by stopper when the pinch Gear is Lower down.
YES
NO
Reassemble the T/Up Arm and Lever T /Up.
Is the Idler Gear separated from the Supply Reel?(Confirm whether the Capstan Motor turns or not)
NO
1. Confirm the conditions of Clutch Bracket ASS'Y and Reel Belt.
2. Replace the Capstan Motor.

2. Front Loading Mechanism

A.

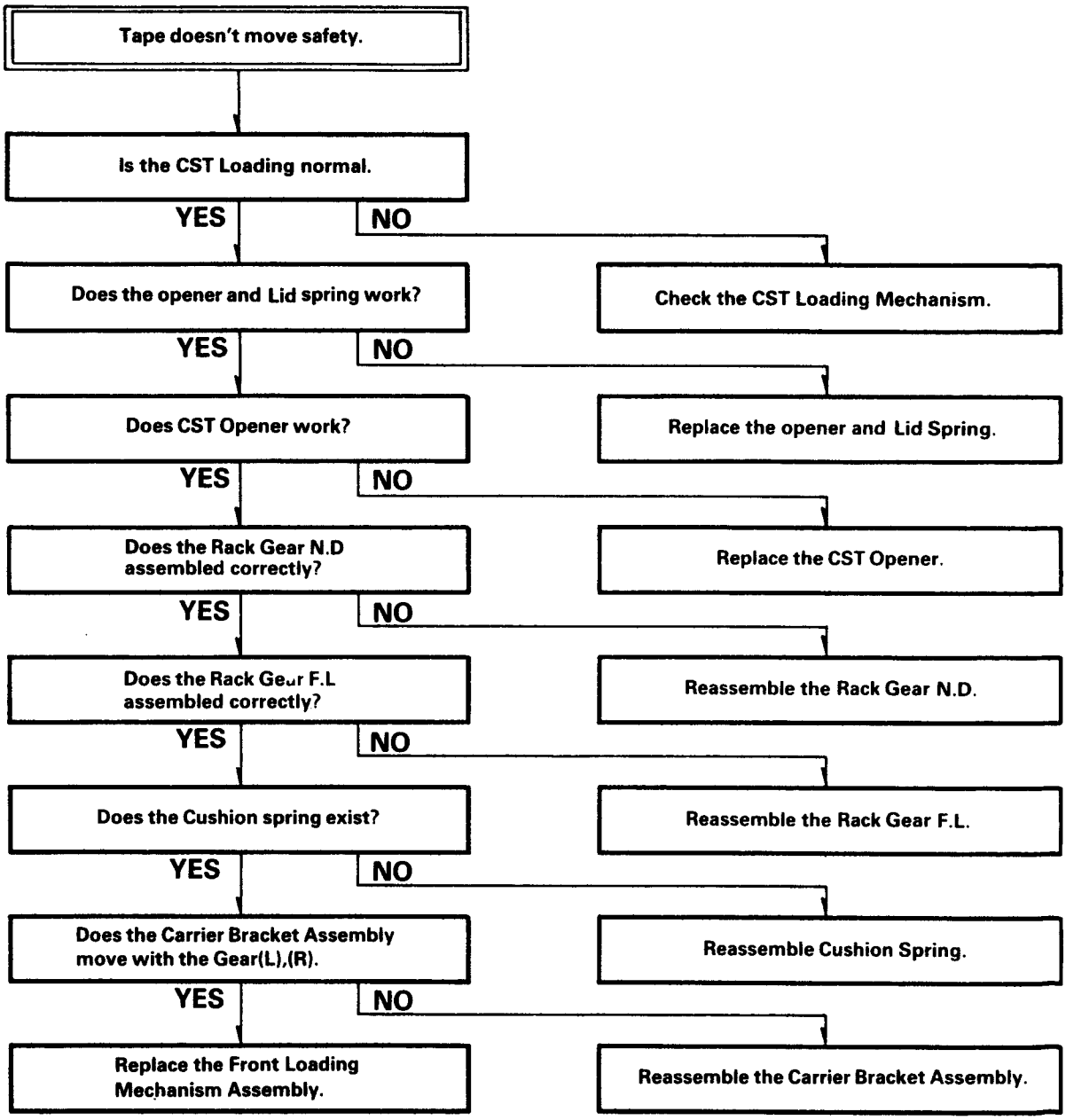


B.



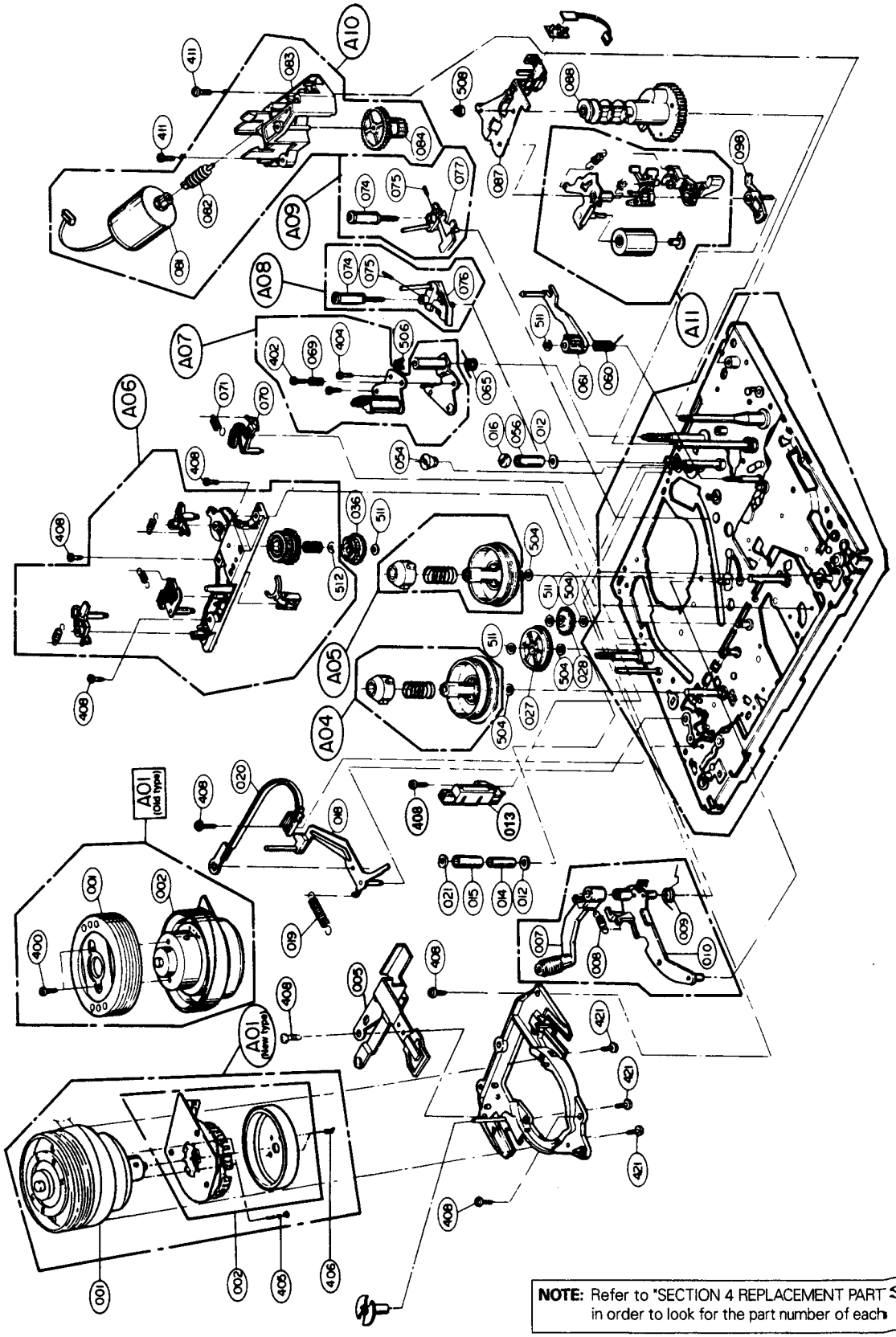
VCR

C.


Tape doesn't move safety.
Is the CST Loading normal.
YES
NO
Check the CST Loading Mechanism.
Does the opener and Lid spring work?
YES
NO
Replace the opener and Lid Spring.
Does CST Opener work?
YES
NO
Replace the CST Opener.
Does the Rack Gear N.D assembled correctly?
YES
NO
Reassemble the Rack Gear N.D.
Does the Rack Gear F.L assembled correctly?
YES
NO
Reassemble the Rack Gear F.L.
Does the Cushion spring exist?
YES
NO
Reassemble Cushion Spring.
Does the Carrier Bracket Assembly move with the Gear(L),(R).
YES
NO
Reassemble the Carrier Bracket Assembly.
Replace the Front Loading Mechanism Assembly.

EXPLODED VIEW

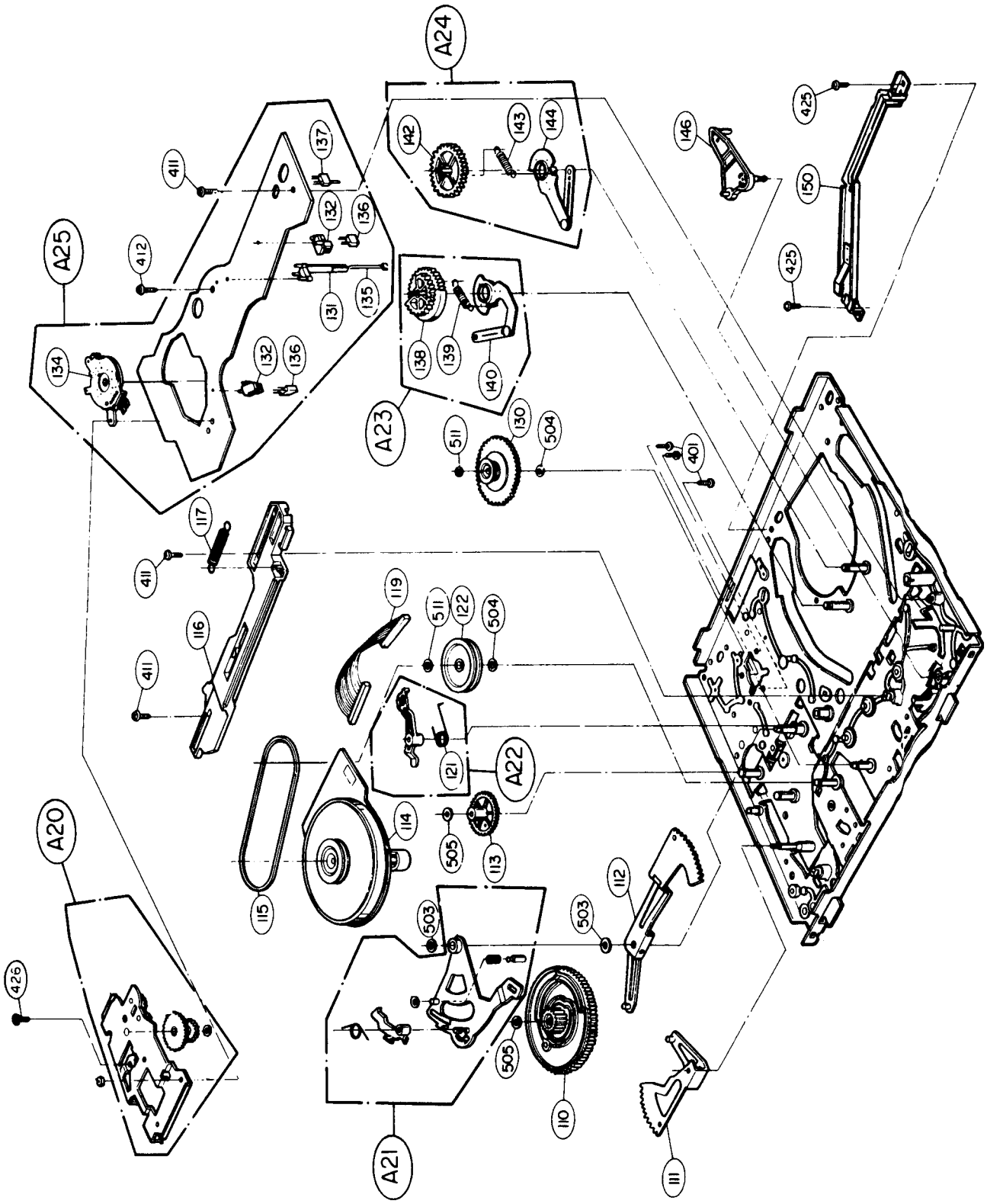
1. Moving Mechanism Section (I)



NOTE: Refer to "SECTION 4 REPLACEMENT PARTS LIST" in order to look for the part number of each part.

2. Moving Mechanism Section (Ⅱ)

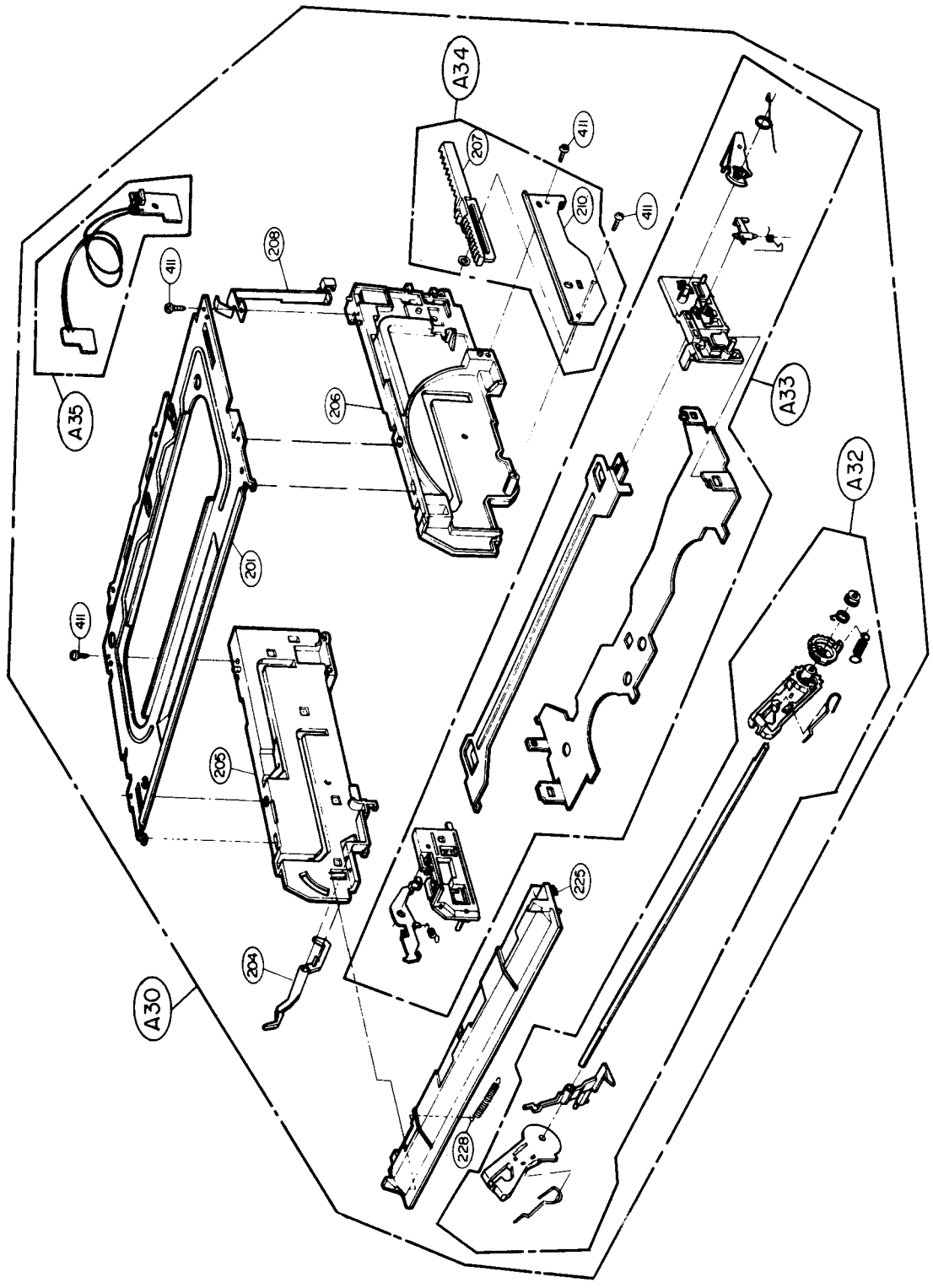
NOTE: Refer to "SECTION 4 REPLACEMENT PARTS LIST" in order to look for the part number of each part.



VCR

3. Front Loading Mechanism Section

NOTE: Refer to "SECTION 4 REPLACEMENT PARTS LIST" in order to look for the part number of each part.



VCR

PART III ELECTRICAL PART

CONTENT

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4. IF P.C.Board.....3-68

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ELECTRICAL ADJUSTMENT PROCEDURES

Electronic Test Equipment

- Oscilloscope
- Video Signal Generator
- Modem Tester
- Level Meter
- Frequency Conuter
- + Driver
- Test tape (SP)
- Recording Tape
- Digital Multimeter
- Distortion Meter
- Sweep & Marker OSC
- Monitor Scope

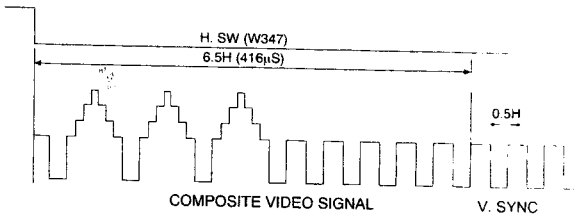
ABBREVIATIONS

- SPEC : SPECIFICATION
- M.P : MEASUREMENT POINT
- A.P : Adjustment Point

1. Servo Circuit

1) PG Adjustment

WAVEFORM



MODE : Playback
SPEC : 6.5±0.5H (416μsec, 1H=64μsec)
M.P : H. SW (W347) Video out (TP303)
A.P : VR201

Fig. 1

Purpose :

For the phase dividing of the Video A,B heads with 180° and the exact tracking of each track to meet head switching point with VHS Spec.

Procedure :

a. Playback a PAL SP test tape.
b. At this time, the "ART" is lighting, after pressing the A.TR(+) or A.TR(-) and adjust the X-Value.
c. Connect CH-1 terminal of oscilloscope to W347 (H.SW) and CH-2 terminal to Video Out terminal of VCR.
d. Trigger the complex Video signal of CH2 to CH-1 (H.SW), and adjust VR201 so that the distance from A(B) head selection point of H.SW signal to the starting point of Vertical synchronized signal is 6.5H (416u sec, 1H=65μ sec).
e. The conversion of A/B Head SW signal uses the Polarity Invert Knob of oscilloscope.

Reference ;

1. ±PG adjustment is practiced in the state of maximum RF level and locked servo system (MTR Mode).
2. The deviation between A/B Head Adjustment location should be within ±0.5H (32μ sec).
3. The deviation between the specification of adjustment and the practical measurement value should be within ±0.5H (32u sec).
4. Oscilloscope and VCR set should be connected with GND.

2. Y/C Circuit

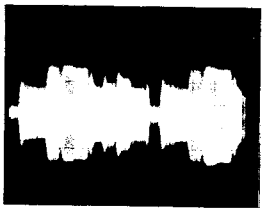
1) Equalizer of Adjustment

Procedure :

a. Input the color bar signal (SECAM) and set to the EE mode.
b. Connect Video Out TP to CH-1 terminal of the oscilloscope.
c. Connect SECAM TP both terminal to CH-2 terminal of the oscilloscope.
d. Adjust VR303 so that variance of amplitude waveform is flatten. (At this time, the waveform should not be double, amplitude of red and mazanta is the same.)

WAVEFORM

(Before Adjusting)



(After Adjusting)

- MODE : Record
- SPEC : Refer to waveform
- M.P : TP303
- A.P : VR302

Fig. 2

2) Bell of Adjustment

Procedure :

a. Input the color bar signal (SECAM) and set to the EE mode.
b. Connect CH-1 terminal of the oscilloscope to Video out TP.
c. Connect CH-2 terminal of the oscilloscope to secam TP terminal (At this time, the mode of the oscilloscope is with chop).
d. Adjust VR302 so that edge of each waveform is flatten.

3. Audio circuit

1) Record Bias Adjustment

- MODE : Record
- SPEC : 2.5mv±0.1mv RMS
- M.P : R449 Both Terminal
- A.P : VR401

Purpose :
This is adjusting the bias current to specification in recording.

Procedure :

a. Connect the Level Meter terminal to both terminal R449.
b. Confirm that the Oscillation Voltage is 2.5mv±0.1mv RMS to connect Level Meter to both terminal R449.
c. At this time, adjust VR401 and make the oscillation voltage fit to specification.

4. Tuner/IF circuit

1) VCO (Voltage Controlled Oscillation) Adjustment

- MODE : PAL B/G (38.9MHz)
- SPEC : DC 2.5±0.1V
- M.P : P7701 2pin (AFC CTL)
- A.P : T705 AFC (Automatic Frequency Control) (VCO COIL)

Procedure :

a. Connect as shown in Fig. 3
b. Input the PAL B/G 38.9MHz (Strength of input electric field : 80± 5dBu) signal OUT Terminal of TV RF Pattern GEN instrument.
c. Confirm that the video signal is Output by connect oscillsocope to P7702 ⑥PIN.
d. Adjust VCO coil T705 so that the voltage of P7701 pin② became DC 2.5±0.1V.

Connection

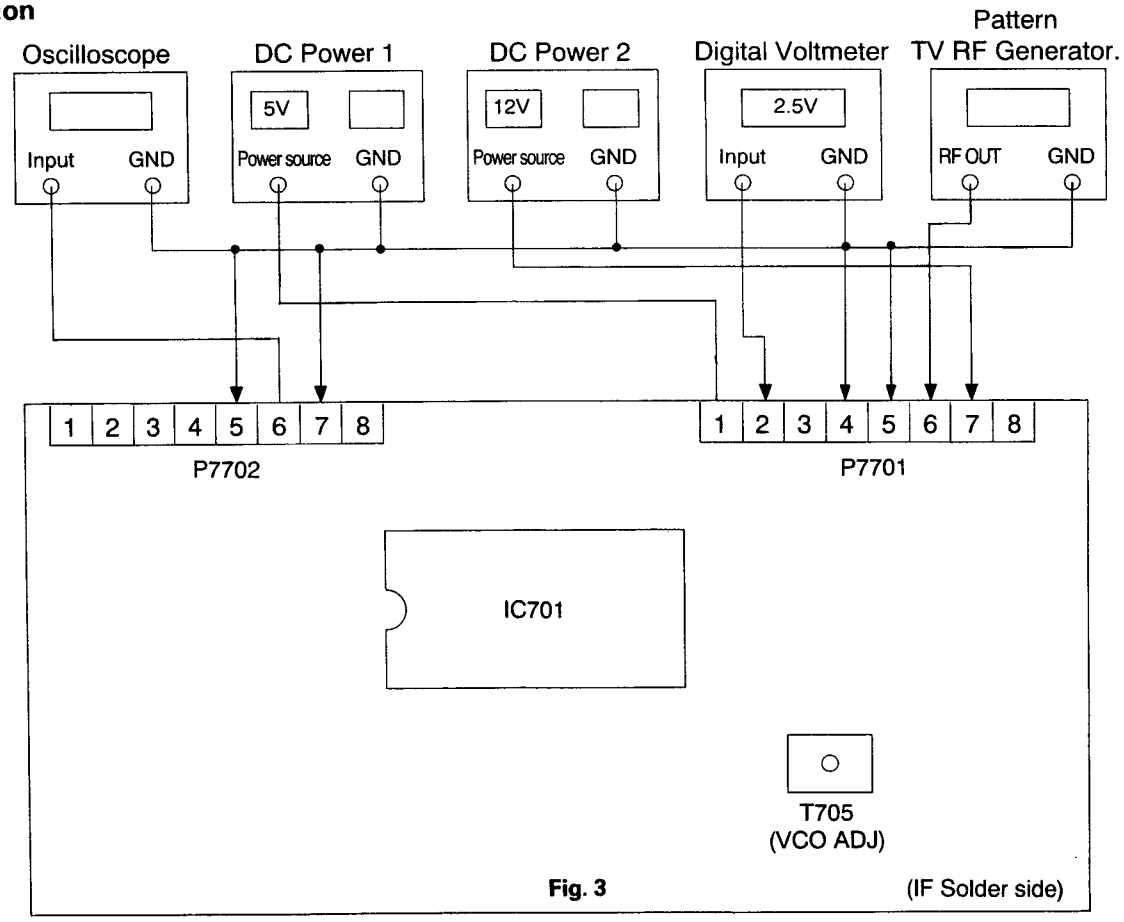


Fig. 3 (IF Solder side)

VCR

2) RF AGC (Automtic Gain Control) Adjustment

- MODE : E-11CH
- SPEC : 6.0V±0.1V P-P
- M.P : W799
- A.P : VR771

Procedure ;

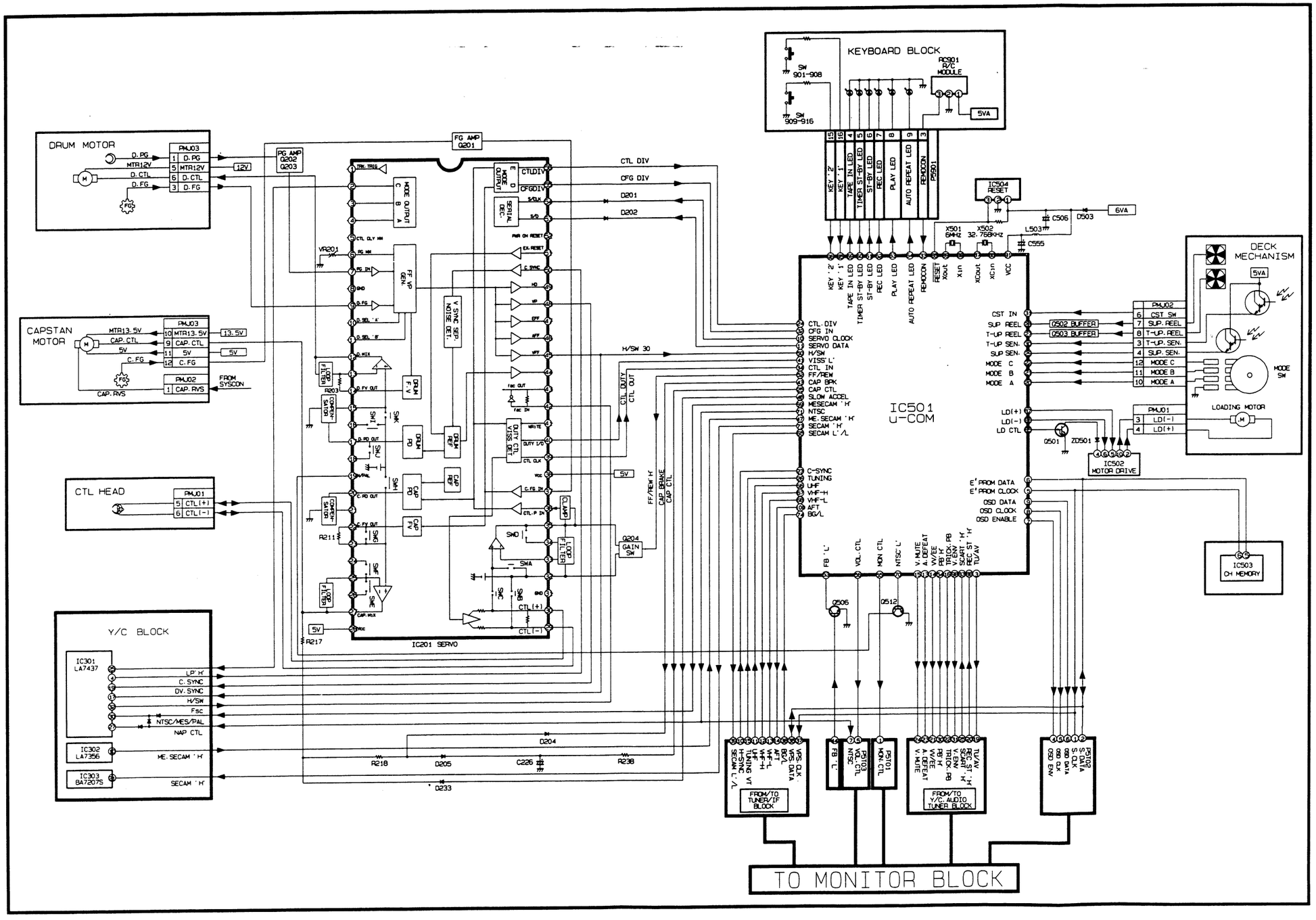
a. Be tuning PAL 11CH (strength of input electric field : 60±1dBu.
b. Connect the Digital Voltmeter to Tuner AGC PIN.
c. Adjust VR771 so that the digital voltmeter is 6.0±0.1V P-P.

Reference ;

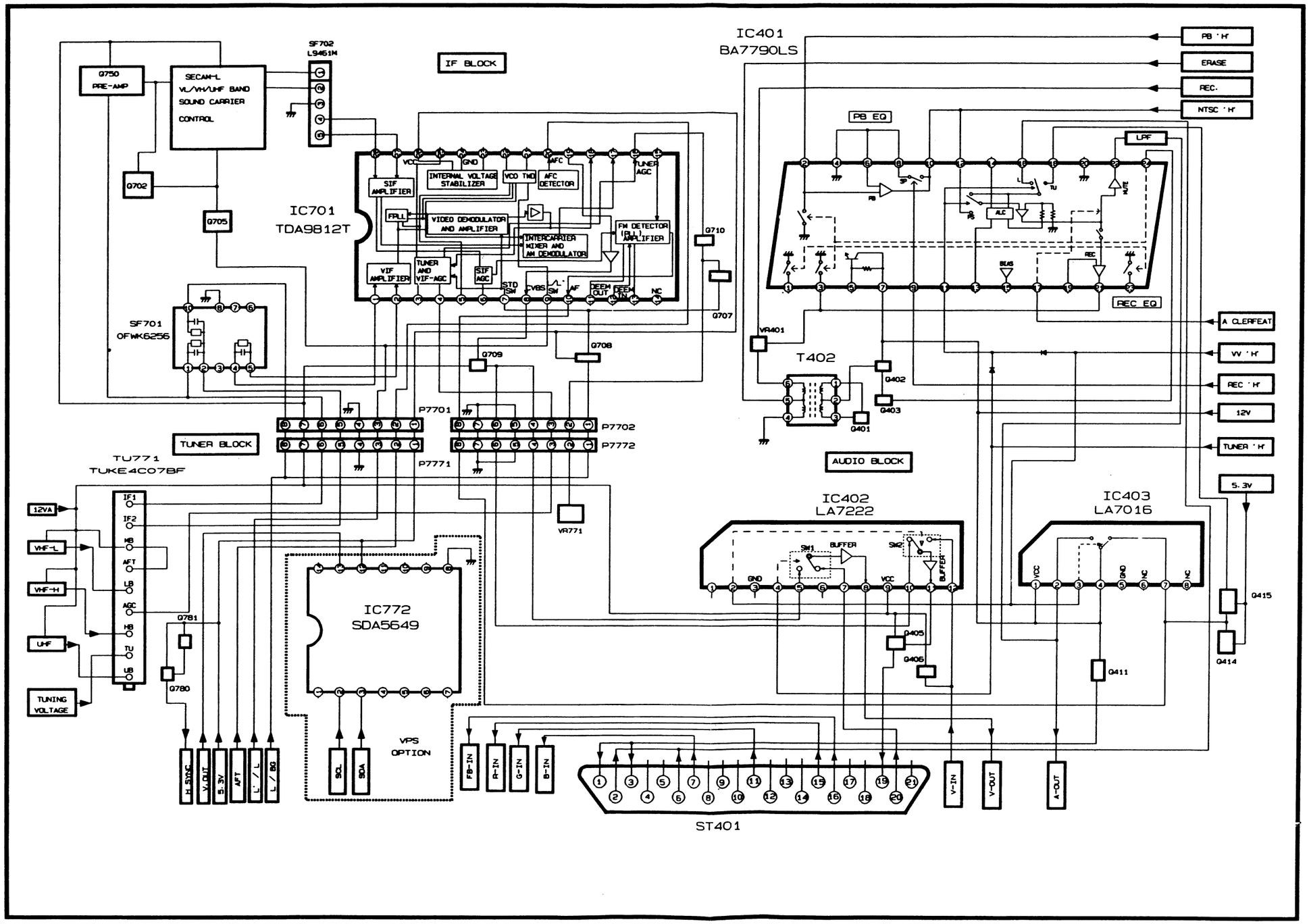
Maintain the input gain in adjusting AGC faithfully.

BLOCK DIAGRAM

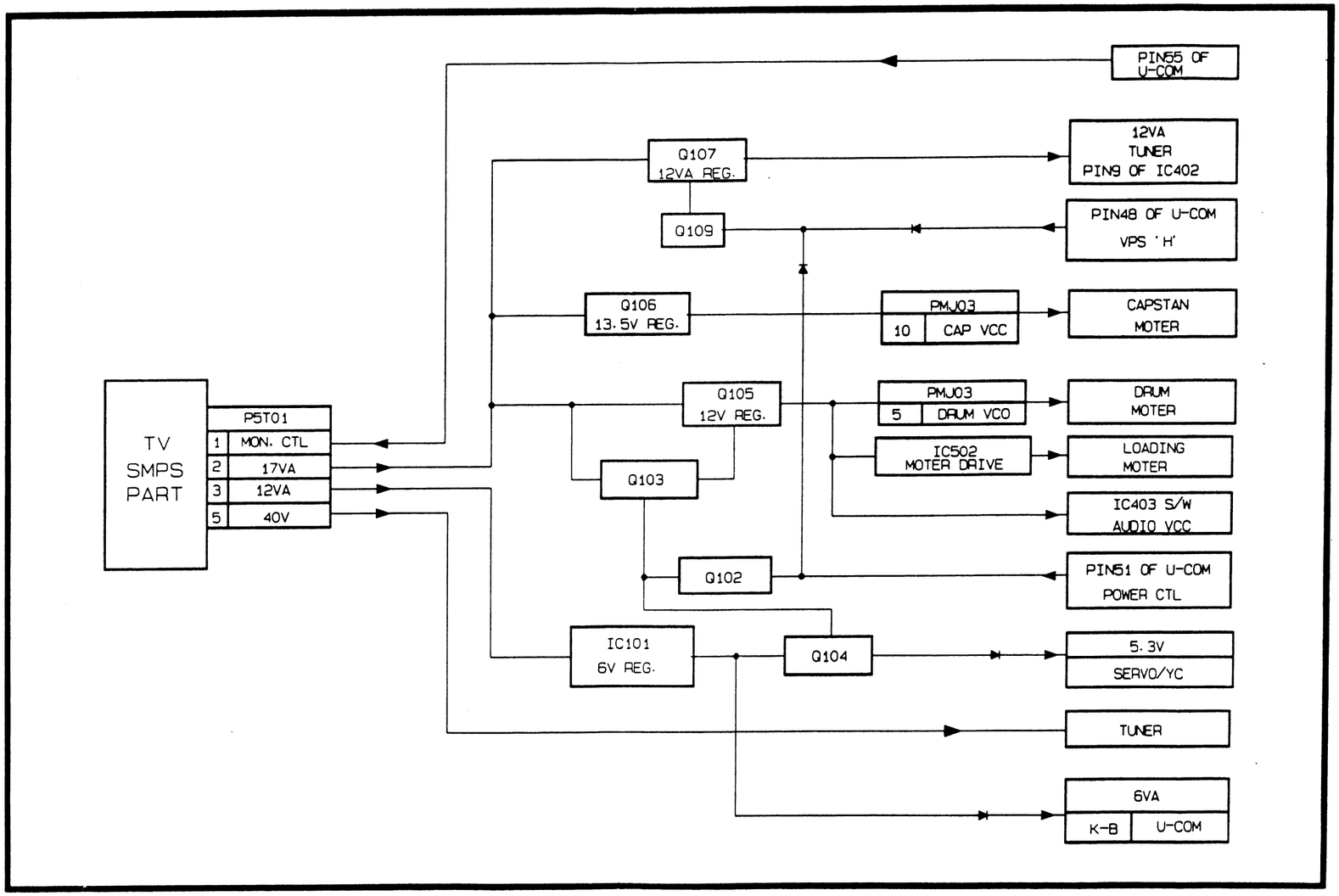
1. Main System (System & Servo) Block Diagram



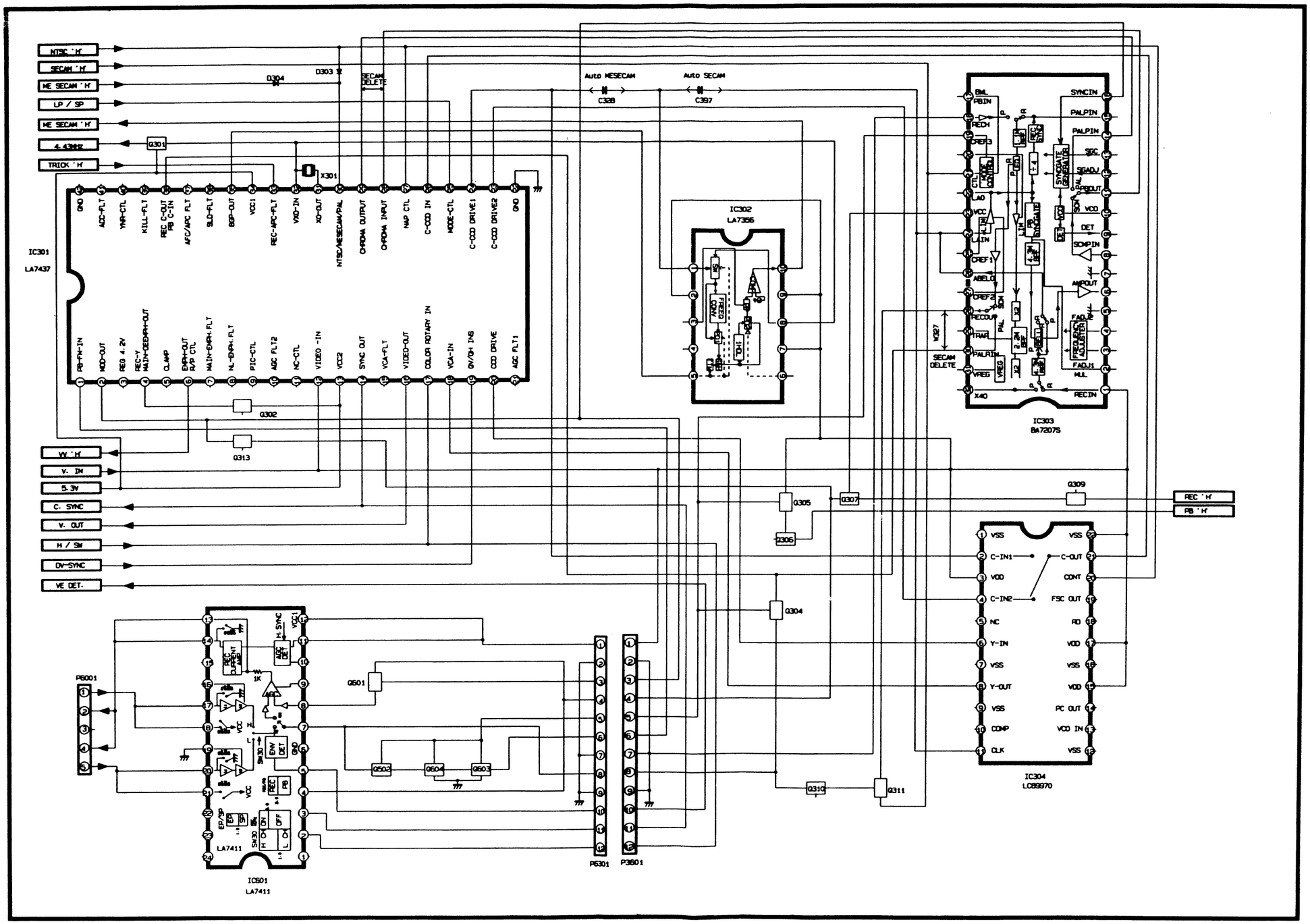
2. TUNER/IF/AUDIO Block Diagram



3. Power Block Diagram

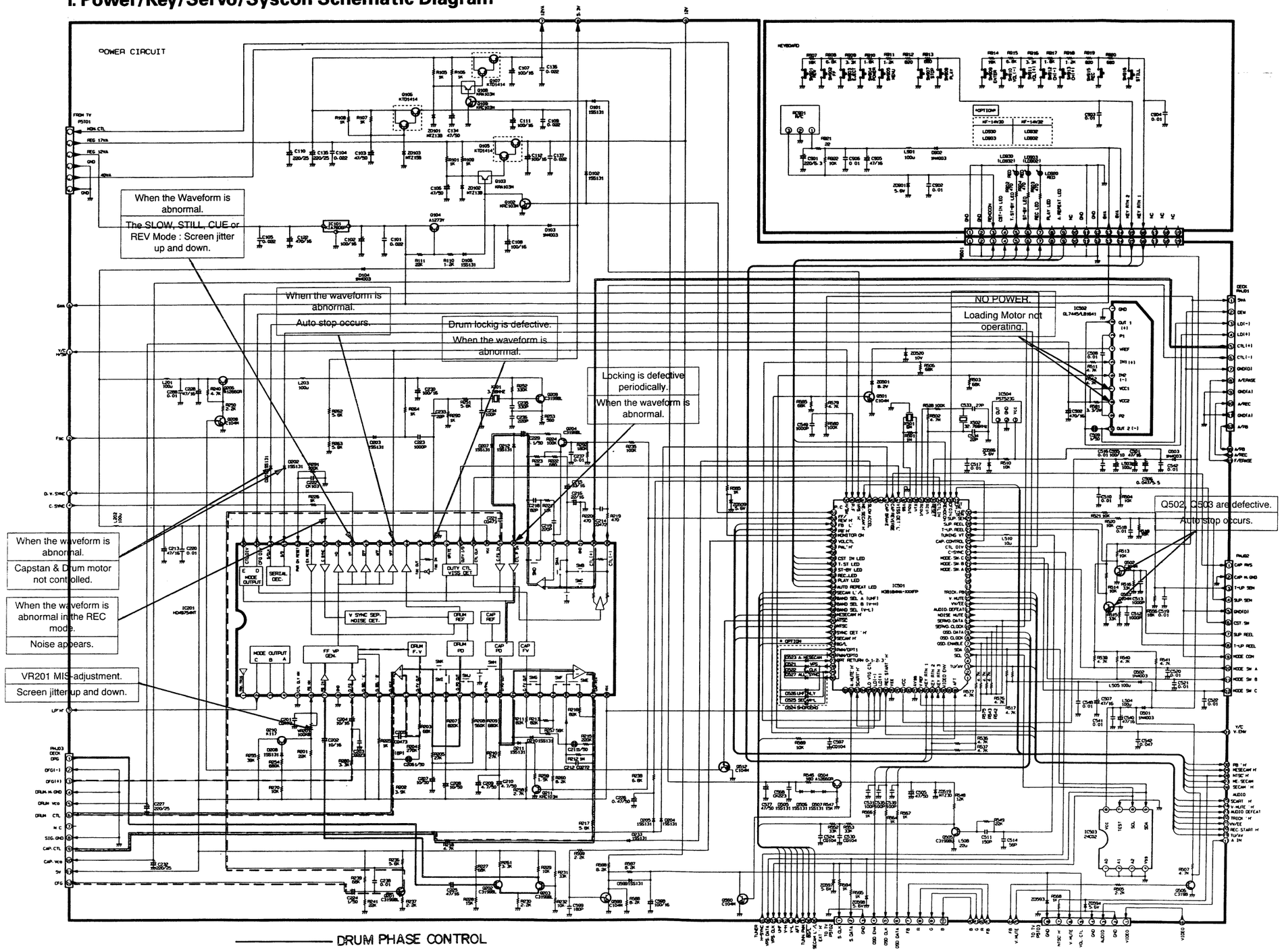


4. Y/C Block Diagram

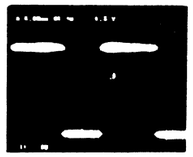


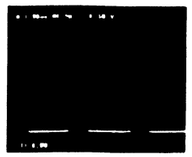
SCHEMATIC DIAGRAM

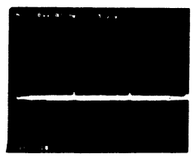
1. Power/Key/Servo/Syscon Schematic Diagram

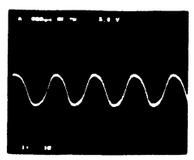

When the Waveform is abnormal.
The SLOW, STILL, CUE or REV Mode : Screen jitter up and down.
When the waveform is abnormal.
Auto stop occurs.
Drum lockig is defective.
When the waveform is abnormal.
Locking is defective periodically.
When the waveform is abnormal.
NO POWER.
Loading Motor not operating.
Q502, Q503 are defective.
Auto stop occurs.
When the waveform is abnormal.
Capstan & Drum motor not controlled.
When the waveform is abnormal in the REC mode.
Noise appears.
VR201 MIS-adjustment.
Screen jitter up and down.
DRUM PHASE CONTROL
DRUM SPEED CONTROL
CAPSTAN PHASE CONTROL
CAPSTAN SPEED CONTROL

1-1. Servo Oscilloscope Waveform

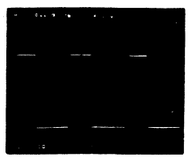
① 
IC201 Pin① TRK TRIGGER

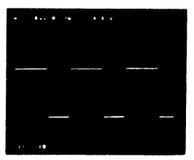
② 
IC201 Pin⑥ PG M.M

③ 
IC201 Pin⑦ DRUM P.G

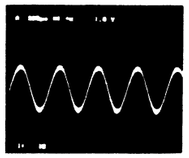
④ 
IC201 Pin⑨ DRUM F.G

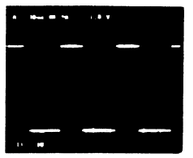
⑤
IC201 Pin㉗ SLOW CONTROL

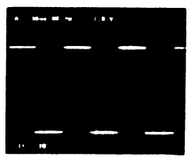
⑥ 
IC201 Pin㉙ REC CTL

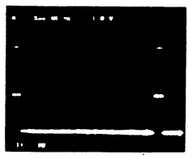
⑦ 
IC201 Pin㉚ REC CTOL

⑧
IC201 Pin㉟ REC CTL

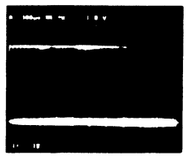
⑨ 
IC201 Pin㊲ CAPSTAN F.G

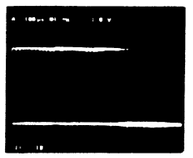
⑩ 
IC201 Pin㊴ CLOCK CTL

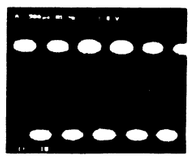
⑪ 
IC201 Pin㊺ SW30

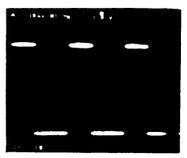
⑫ 
IC201 Pin㊽ DV. SYNC

⑬
IC201 Pin㊿ COMPOSITE SYNC

⑭ 
IC201 Pin㊸90 **SERIAL DATA**

⑮ 
IC201 Pin㊹ SERIAL CLOCK

⑯ 
IC201 Pin㊺ CFG C.D

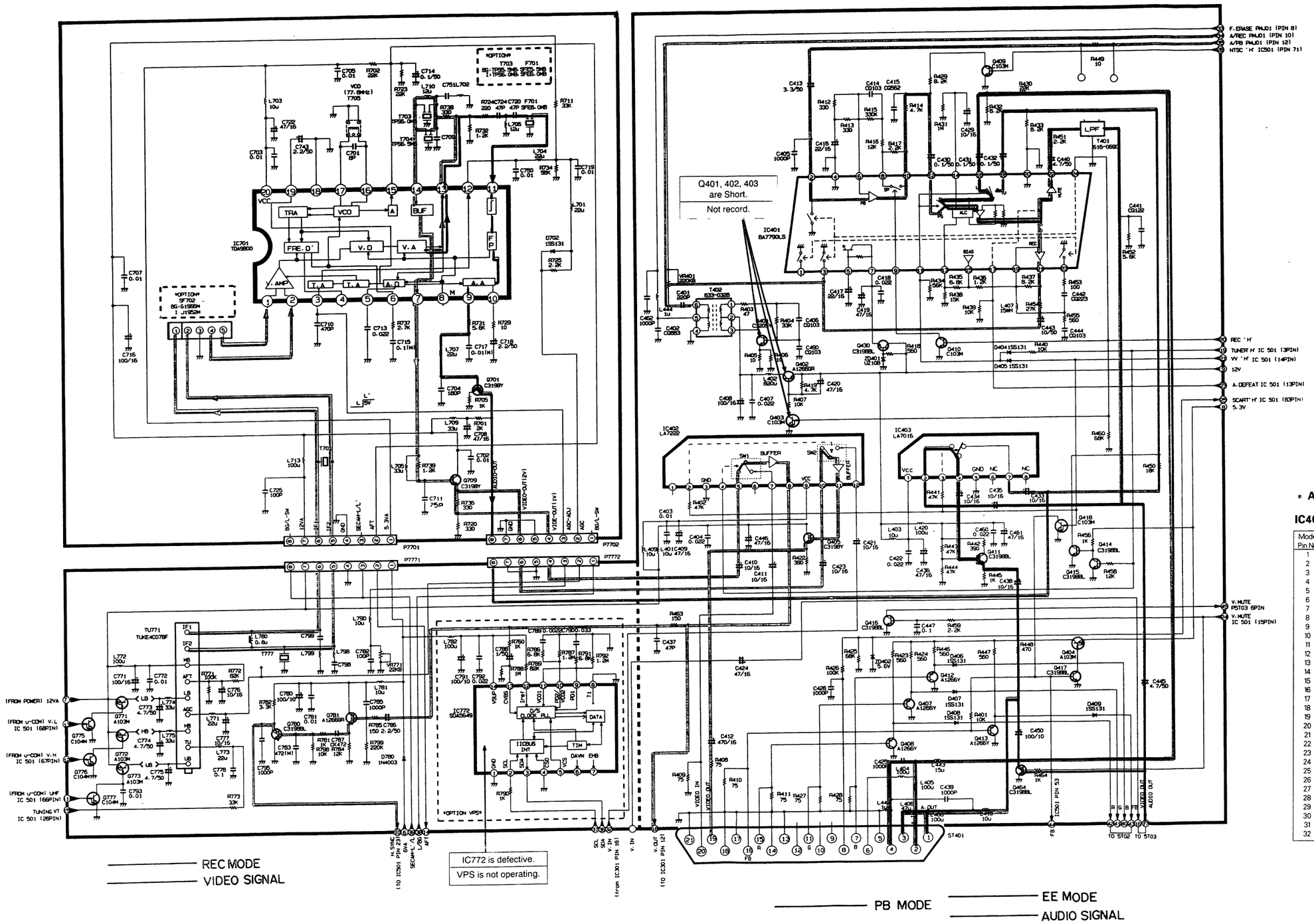
⑰ 
IC201 Pin㊻ CTL C.D

*** Servo IC voltage sheet**

IC201

1	2.5	3.8
2	0	0
3	0	0
4	5	5
5	0	0
6	0	0
7	2	2
8	0	0
9	2.8	2.8
10	2.7	2.7
11	5	5
12	1.4	1.4
13	2.5	2.5
14	2.5	2.5
15	2.5	2.5
16	2.5	2.5
17	2.5	2.5
18	2.5	2.5
19	0	0
20	2.5	2.5
21	2.5	2.5
22	2.5	2.5
23	2.5	2.5
24	2.5	2.5
25	2.5	2.5
26	2.8	2.8
27	2.8	2.8
28	5	5
29	2.5	2.2
30	2.5	3.0
31	0	0
32	2.5	2.5
33	2.5	2.5
34	2.5	2.5
35	2.5	2.5
36	2.5	2.5
37	2.8	2.8
38	5	5
39	0	3.8
40	5	5
41	0	0
42	2.6	2.6
43	2.6	2.6
44	0	2.6
45	2.6	2.6
46	2.6	0
47	2.6	2.6
48	0	0
49	0	0
50	0.6	0.6
51	5	5
52	5	5
53	0.8	0.8
54	1.0	1.0
55	2.5	2.6
56	2.2	5

2. Tuner/IF/Audio/VPS Schematic Diagram



* Audio Circuit Voltage Sheet

IC401

Mode / Pin No	EE	REC	PB	EE	REC	PB
1	0	0	0	0	0	0
2	8.5	11.2	11.2	11.4	8.5	9
3	0	0	0	0	0	0
4	2	2	2	2	2	2
5	2	2	2	2	2	2
6	0	0	0	0	0	0
7	2	2	2	2	2	2
8	2	2	2	2	2	2
9	0	0	0	0	0	0
10	0	0	0	0	4.8	4.6
11	0	0	0	0	0	0
12	0.4	0.4	0.3	0.4	0	0
13	9.5	9.6	9.6	10	9.5	9.5
14	6	6	6	6	6	5.8
15	6	6	6	6	6	5.8
16	6	6	5.8	6	6	5.8
17	6	6	6	6	6	5.8
18	0	0	0	0	0	0
19	0	0	0	5	0	5
20	0	0	0	0	0	0
21	0	0	0	0	0	0
22	0	0	0	0	0	0
23	0.5	0.6	0.6	0.6	0.5	0.5
24	0	0	5	0	5	5
25	5.5	5.8	5.8	5.8	5.8	5.8
26	0	5	5	5	5	5
27	0	12	12	12	12	12
28	0	11.5	11.5	11.5	11.5	11.5
29	12	12	12	12	12.4	12.2
30	12	12	12	12	12.2	12.1
31	11.4	11.4	11.4	11.4	11.4	11.5
32	0	0	0	0	0	0

3. Y/C & PRE-AMP Schematic Diagram.

IC301 Pin30 is defective.
NTSC. MESECAM mode detection is failed.
Color signal is unstable.

OPTION SECAM

IC303 is defective.
SECAM mode is failed.
Color signal doesn't appear in the SECAM mode.

~~IC302 is defective.~~
SECAM/MESECAM mode detection is failed.

Q302 is defective.
Playback screen doesn't appear.

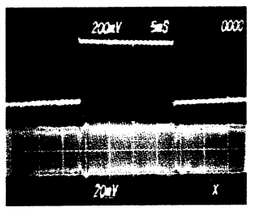
IC601 is defective.
Playback/recording mode is failed.

iC304 is defective.
Drop out compensation is failed.
Color signal doesn't appear in the PB mode.

REC-C
REC-Y
PB-C
PB-Y

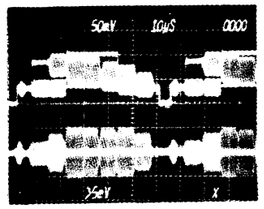
3-1 Y/C Oscilloscope Waveform

①



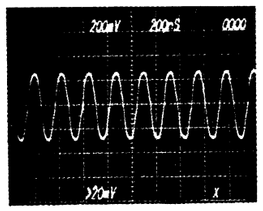
IC301 PIN ①
Playback RF (SP mode)
20mV/5msec

②



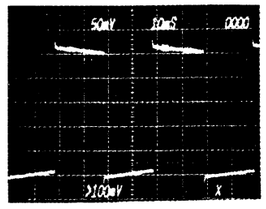
IC301 PIN ㉙
Playback Color
5mV/10μsec

③



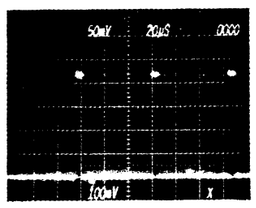
IC301 PIN ㉜
Record Mode:Fsc
Oscillation 20mV/200nsec

④



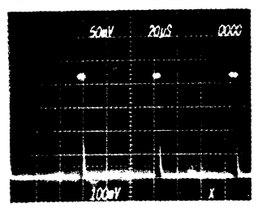
IC301 PIN ⑰
C/Rot 25
100mV/10msec

⑤



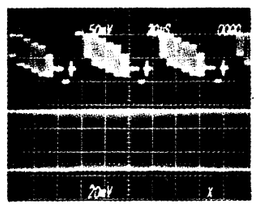
IC301 PIN⑭
C. SYNC
100mV/20μsec

⑥



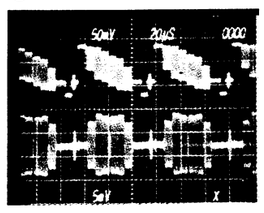
IC301 PIN ㉟
B.G.P Out terminal
100mV/20μsec

⑦



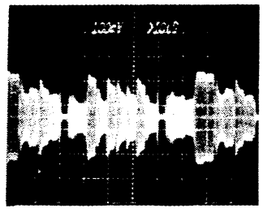
IC301 PIN ②
Record FM signal
20mV/20μsec

⑧



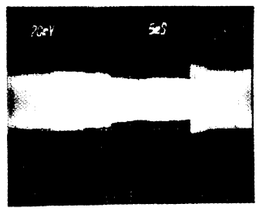
IC301 PIN ㊳
Record Color Signal
5mV/20μsec

⑨



IC302 PIN ⑪
PB Bell
Adjustment
100mV/20μsec

⑩



P3601 PIN ⑧
PB Color Signal
200mV/5msec

★ IC Voltage Sheet

PB(REC)

0 (0)	1.8 (0.9)	2 (2)	1.9 (1.9)	3.1 (2.2)	2.8 (1.6)	2.8 (2)	4 (1.5)	4.9 (5)	2 (2)	2.8 (2.8)	3.8 (3.8)	1 (1)	2.5 (0)	1.8 (1.8)	0 (0)	2.4 (2.4)	0.6 (0.6)	2.4 (2.4)	2.4 (2.4)	0 (0)
		40					35					30					25			

IC301 (LA7437)

1				5					10					15					20	
3.2 (2.3)	3.4 (3.2)	4.2 (4.2)	3 (2.4)	3.1 (3)	4.7 (2)	4.7 (2)	3.1 (2.8)	2.5 (2.5)	1.8 (1.8)	2.8 (2.8)	3.1 (3.1)	4.9 (4.9)	3.5 (3.5)	3 (4)	1.5 (1.5)	5 (5)	2.1 (2.1)	2.1 (0)	1.1 (1.1)	2 (2)

PB(REC)

0 (0)	0 (0)	0 (0)	0 (4)	0.6 (0)	2 (3.4)	0 (4)	0.6 (0)	2 (3.4)	5 (4.8)	0 (4)	0 (1.4)
			20						15		

IC601 (LA7411)

1				5					10		
0 (0)	2.6 (2.6)	2.6 (2.6)	0 (5)	1.5 (0)	0 (0)	2 (3.4)	0 (3.4)	0.4 (1.4)	2.5 (2.4)	5 (4.2)	5 (4.6)

PB(REC)

SECAM(PAL)

0	5	4 (2)	0	4
1				5

IC302 (LA7356)

10				6
4.5 (0)	5	0	5	2.5

0 (0)	1.4 (1.4)	0 (0)	5 (5)	8.4 (8.4)	5 (5)	0 (0)	5 (5)	1.9 (1.9)	1.9 (1.9)	0 (0)
		20					15			

IC304 (LC89970)

1				5					10	
0 (0)	2.3 (2.3)	5 (5)	2.3 (2.3)	0 (0)	2.3 (2.3)	0 (0)	1.3 (1.3)	0 (0)	2.3 (2.3)	1.2 (1.2)

PB(REC)

3	2.6	3	2	2.5	2.4	2	2.4	2.5	5	4.6	0.2 (4.6)	2.6	0.2 (5)	2.6	5
		30					25					20			

IC303 (BA7207S)

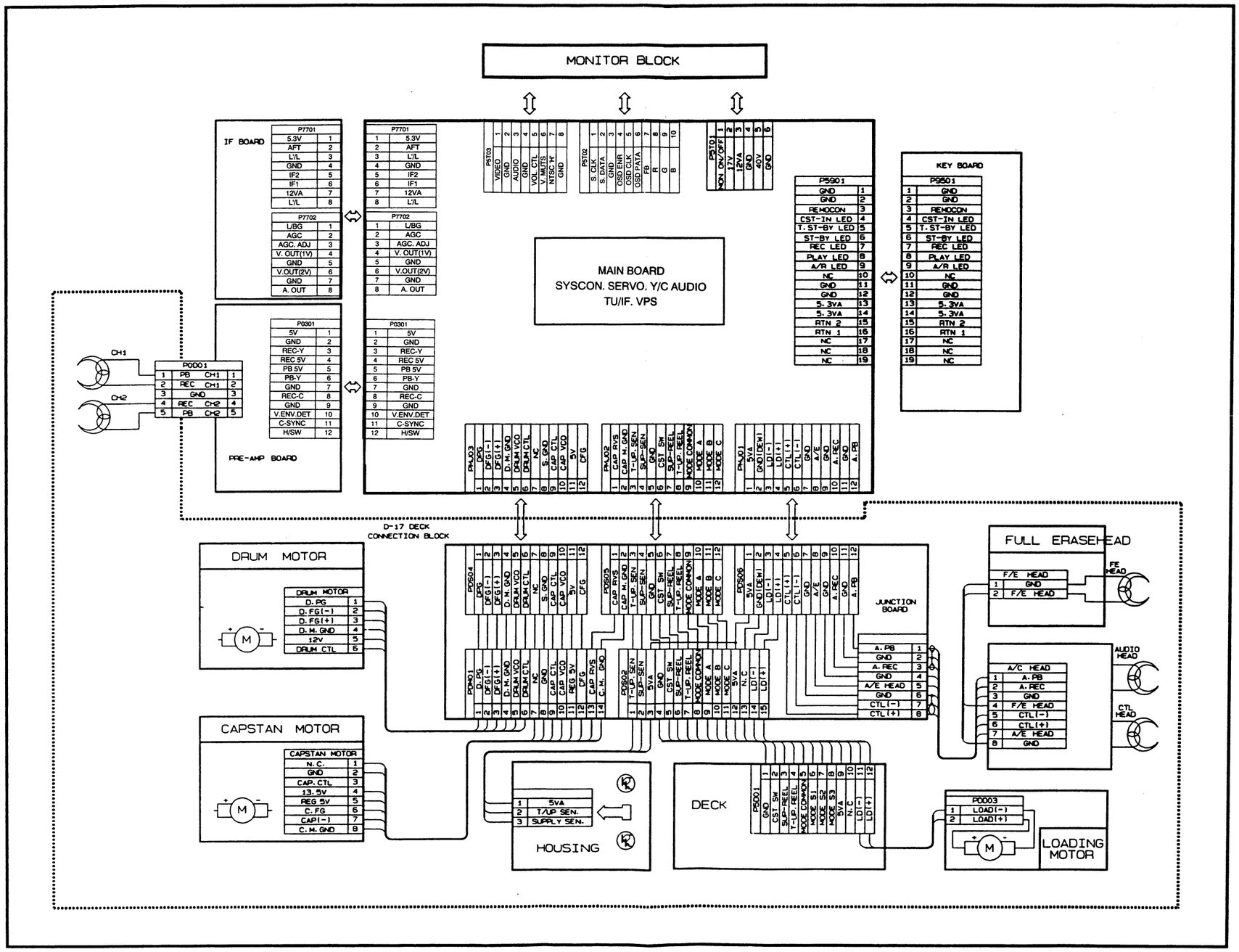
1				5					10					15	
2.5	4.4	2	2	0	2	0	3	2	2	2.5	2.5	2.5	3	4	3

★ TR Voltage Sheet

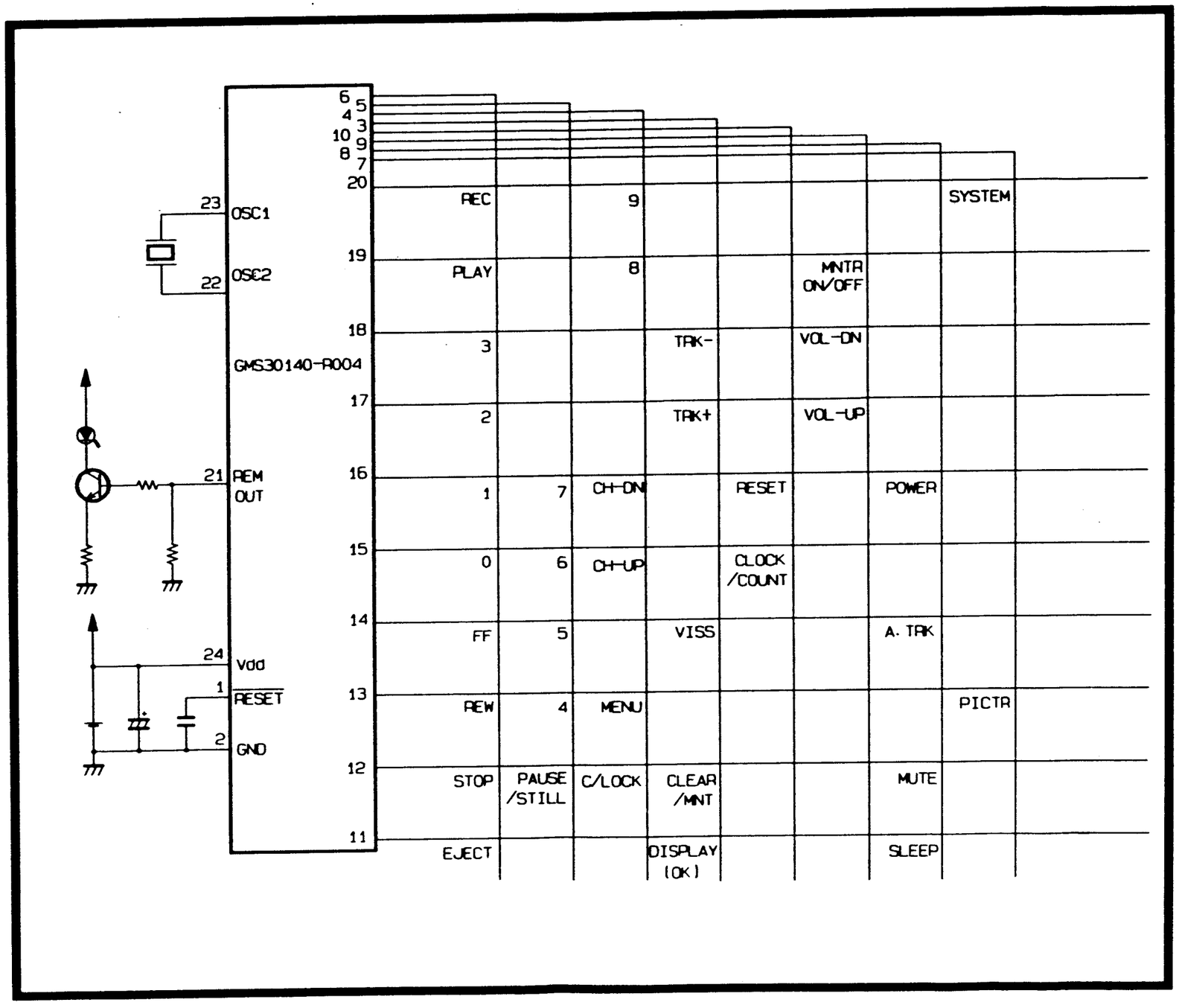
PB(REC)

Port / TR NO.	Emitter	Collector	Base
Q303	0.6(0)	1.8(0.4)	1.4(0)
Q307	0(0)	0(0)	0(0)
Q308	1.6(2)	4.5(0.5)	2.2(2.5)
Q309	1.8(0)	3(0.2)	2.5(0.2)
Q310	2.4(0.4)	1.3(0)	1.8(0)
Q311	0.6(0)	3.9(0.4)	1.3(0)
Q312	3(0)	5(0.4)	3.9(0.4)
Q315	3.4(3)	0(0)	3(2)

4. Connection Diagram

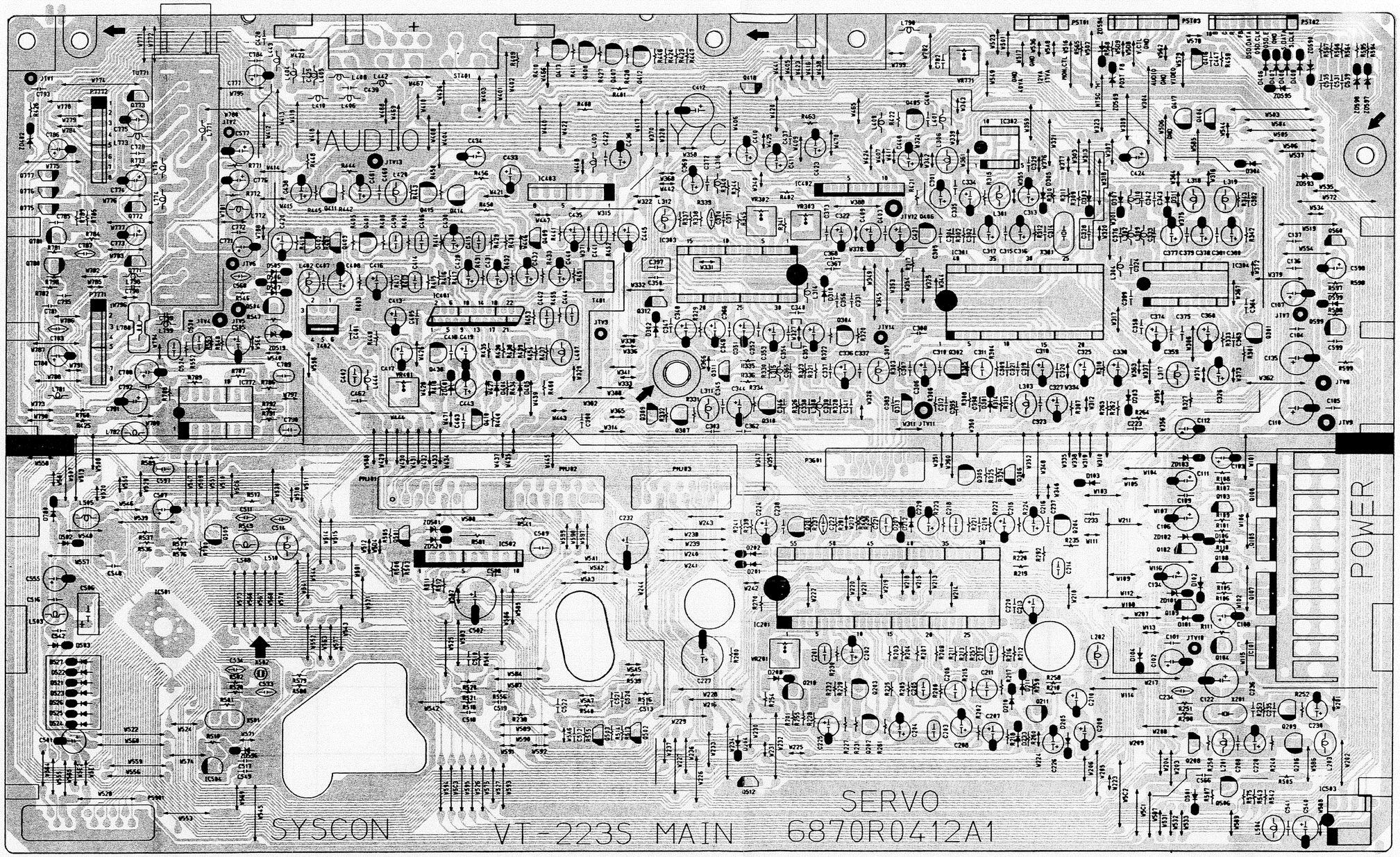


5. Transmitter Schematic Diagram

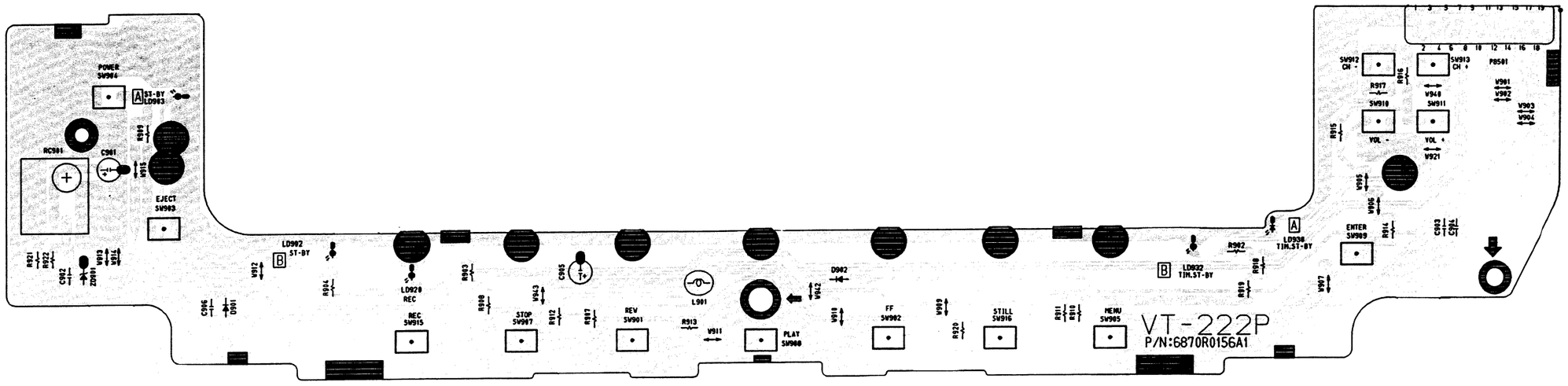


PRINTED CIRCUIT BOARD

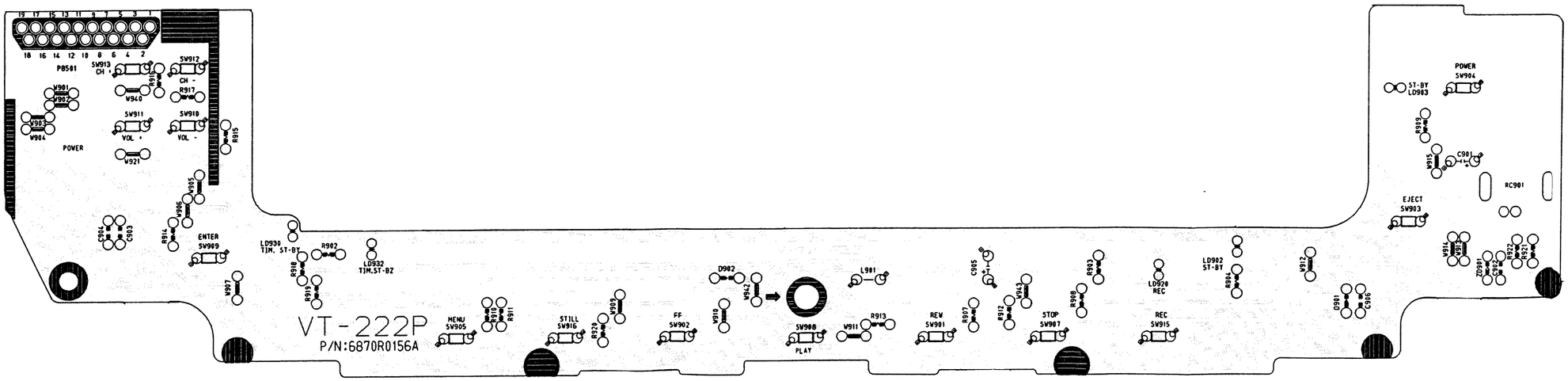
1. Main P.C.Board (Component Side)



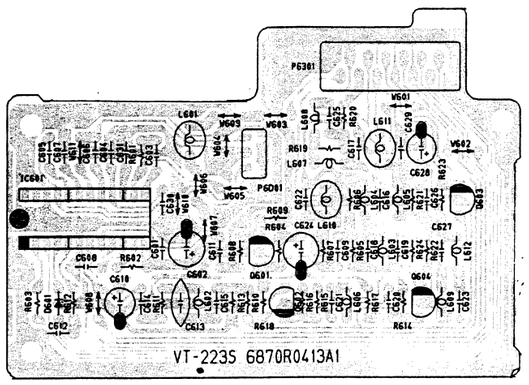
2. Key Function P.C.Board (Component side)



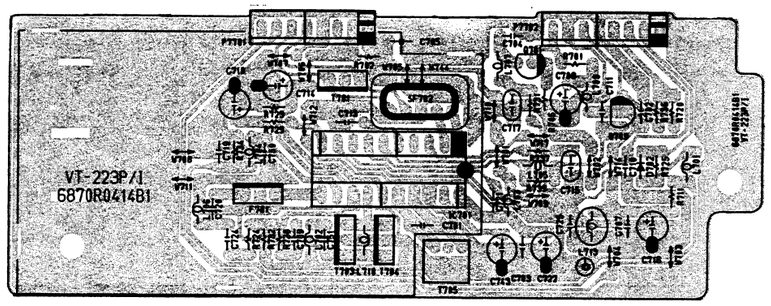
2-1. Key Function P.C.Board (Solder side)



3. Pre-Amp P.C.Board (Component side)



4. IF P.C.Board (Component side)



VIDE-V21874 / DRUCK 16

REPLACEMENT PARTS LIST

LOCA. NO	PART NO	DESCRIPTION
		CAPACITORS
C301	0CE476DF618	C,ELECTROLYTIC 47UF STD 16V M
C302	181-007T	CAPACITOR MPE 50V 1.0UF J(TR)
C303	0CQ1031N509	C,POLYESTER(MYLAR) 0.01U 100V K
C304	0CE107DJ618	C,ELECTROLYTIC 100UF STD 35V M
C305	0CQ2231N519	CAPACITOR POLYESTER(MYLAR) 0.022MF 100V K POLY TP
C306	0CE476DF618	C,ELECTROLYTIC 47UF STD 16V M
C307	0CN8220F579	C,TUBULA(HIGH DIELE) 8200P 16V K
C308(14")	0CE474DK618	C,ELECTROLYTIC 0.47UF STD 50V M
C308(20")	0CE104D K618	C,ELECTROLYTIC 0.1000UF STD 50V M FL TP5
C309	181-027C	CAPACITOR TANTAL 25V 1.0UFK TP
C310	0CE108DH618	C,ELECTROLYTIC 1000UF STD 25V M
C311	0CQ1041N509	C,POLYESTER(MYLAR) 0.1MF 100V L
C312	0CE475DK618	C,ELECTROLYTIC 4.7UF STD 50V M
C313	0CQ4721N509	C,POLYESTER(MYLAR) 0.0047U 100V K
C314	0CN1010K519	C,TUBULA(HIGH DIELE) 100PF 50V K
C315	0CE105DK618	C,ELECTROLYTIC 1UF STD 50V M
C316	0CX4700K409	C,TUBULA(T.C) 47PF 50V J
C402(14")	181-015G	CAPACITOR MPP 1600V 0.0077UF H
C402(20")	181-015J	CAPACITOR MPP 1600V 0.0086UF H
C403	0CE105DP618	CAPACITOR,ELECTROLYTIC 1UF STD 160V M FL TP5
C404	0CK8210W515	C,CERAMIC(HIGH DIELE) 820PF 500V K
C405	0CN3310K519	C,TUBULA(HIGH DIELE) 330P 50V K
C406	0CE105DK618	C,ELECTROLYTIC 1UF STD 50V M
C407	0CE476DH618	C,ELECTROLYTIC 47UF STD 25V M
C408	0CE105DK618	C,ELECTROLYTIC 1UF STD 50V M
C409	0CQ2231N519	CAPACITOR POLYESTER(MYLAR) 0.022MF 100V K POLY TP
C410	0CE106DF618	C,ELECTROLYTIC 10UF STD 16V M
C411	0CN1030F679	C,TUBULA(HIGH DIELE) 0.01MF 16V M
C412	0CE476DF618	C,ELECTROLYTIC 47UF STD 16V M
C413	0CE104DK618	C,ELECTROLYTIC 0.1UF STD 50V M
C414	0CQ1031N509	C,POLYESTER(MYLAR) 0.01U 100V K
C415	0CQ1031N509	C,POLYESTER(MYLAR) 0.01U 100V K
C416	0CN1010K519	C,TUBULA(HIGH DIELE) 100PF 50V K
C417	0CK8210W515	C,CERAMIC(HIGH DIELE) 820PF 500V K
C418	0CE225DP618	C,ELECTROLYTIC 2.2UF STD 160V M
C419(14")	181-013H	CAPACITOR MPP 200V 0.62UF J
C419(20")	181-013B	CAPACITOR MPP 200V 0.36UF J
C421	0CQ1042K439	C,POLYESTER(MYLAR) 0.1UF S 50V J
C501	0CE225DK618	C,ELECTROLYTIC 2.2UF STD 50V M
C502	0CN1020K519	C,TUBULA(HIGH DIELE) 1000PF 50V K
C503	0CE106DF618	C,ELECTROLYTIC 10UF STD 16V M
C504	0CE106DF618	C,ELECTROLYTIC 10UF STD 16V M
C505	0CN1030F679	C,TUBULA(HIGH DIELE) 0.01MF 16V M
C506	0CE107DF618	C,ELECTROLYTIC 100UF STD 16V M
C507	0CE106DF618	C,ELECTROLYTIC 10UF STD 16V M
C508	0CE106DK618	C,ELECTROLYTIC 10UF STD 50V M
C509	0CQ4731N509	C,POLYESTER(MYLAR) 0.047U 100V K
C510	0CE106DK618	C,ELECTROLYTIC 10UF STD 50V M
C511	0CE105DK618	C,ELECTROLYTIC 1UF STD 50V M
C512	0CE476DF618	C,ELECTROLYTIC 47UF STD 16V M
C513	0CN1030F679	C,TUBULA(HIGH DIELE) 0.01MF 16V M

LOCA. NO	PART NO	DESCRIPTION
C514	0CX1800K409	C,TUBULA(T.C) 18PF 50V J
C516	0CN1030F679	C,TUBULA(HIGH DIELE) 0.01MF 16V M
C517	0CE104DK618	C,ELECTROLYTIC 0.1UF STD 50V M
C518	0CQ2231N519	CAPACITOR POLYESTER(MYLAR) 0.022MF 100V K POLY TP
C519	0CC1500K415	C,CERAMIC(TEMP COMP) 15P 50V J
C520	0CQ2231N519	CAPACITOR POLYESTER(MYLAR) 0.022MF 100V K POLY TP
C521	0CQ1041N509	C,POLYESTER(MYLAR) 0.1MF 100V L
C522	0CQ1041N509	C,POLYESTER(MYLAR) 0.1MF 100V L
C523	0CE104DK618	C,ELECTROLYTIC 0.1UF STD 50V M
C524	0CE104DK618	C,ELECTROLYTIC 0.1UF STD 50V M
C525	0CE476DF618	C,ELECTROLYTIC 47UF STD 16V M
C526	0CN1030F679	C,TUBULA(HIGH DIELE) 0.01MF 16V M
C527	0CN1010K519	C,TUBULA(HIGH DIELE) 100PF 50V K
C528	0CQ1042K439	C,POLYESTER(MYLAR) 0.1UF S 50V J
C529	0CQ2231N519	CAPACITOR POLYESTER(MYLAR) 0.022MF 100V K POLY TP
C530	0CC8200K415	C,CERAMIC(TEMP COMP) 82P 50V J
C531	181-007F	C,MPE 50V 0.22UF J
C532	0CC8200K415	C,CERAMIC(TEMP COMP) 82P 50V J
C533	181-027C	CAPACITOR TANTAL 25V 1.0UFK TP
C534	0CN1030F679	C,TUBULA(HIGH DIELE) 0.01MF 16V M
C535	0CE2251K636	C,ELECTROLYTIC 2.2000UF SM 50V M FM5 BP(D) TP
C536	0CE226DK618	CAPACITOR,ELECTROLYTIC 22UF STD 50V M FL TP5
C537	0CE474DK618	C,ELECTROLYTIC 0.47UF STD 50V M
C538	0CE474DK618	C,ELECTROLYTIC 0.47UF STD 50V M
C539	0CE474DK618	C,ELECTROLYTIC 0.47UF STD 50V M
C540	0CE104DK618	C,ELECTROLYTIC 0.1UF STD 50V M
C541	0CN1030F679	C,TUBULA(HIGH DIELE) 0.01MF 16V M
C542	0CE476DF618	C,ELECTROLYTIC 47UF STD 16V M
C543	0CQ1041N509	C,POLYESTER(MYLAR) 0.1MF 100V L
C547	0CE106DF618	C,ELECTROLYTIC 10UF STD 16V M
C548	0CC1210K405	CAPACITOR,CERAMIC(TEMP COMP) 120P 50V J SL TS
C549	0CC1210K405	CAPACITOR,CERAMIC(TEMP COMP) 120P 50V J SL TS
C550	0CE476DF618	C,ELECTROLYTIC 47UF STD 16V M
C551	0CN1030F679	C,TUBULA(HIGH DIELE) 0.01MF 16V M
C552	0CE107DF618	C,ELECTROLYTIC 100UF STD 16V M
C553	0CE476DF618	C,ELECTROLYTIC 47UF STD 16V M
C554	0CE107DF618	C,ELECTROLYTIC 100UF STD 16V M
C555	0CN1030F679	C,TUBULA(HIGH DIELE) 0.01MF 16V M
C556	0CE226DK618	CAPACITOR,ELECTROLYTIC 22UF STD 50V M FL TP5
C558	0CQ1031N509	C,POLYESTER(MYLAR) 0.01U 100V K
C560	0CN1030F679	C,TUBULA(HIGH DIELE) 0.01MF 16V M
C561	0CN1010K519	C,TUBULA(HIGH DIELE) 100PF 50V K
C562	0CE476DF618	C,ELECTROLYTIC 47UF STD 16V M
C563	0CE476DF618	C,ELECTROLYTIC 47UF STD 16V M
C564	0CN1030F679	C,TUBULA(HIGH DIELE) 0.01MF 16V M
C573	0CX5100K409	C,TUBULA(T.C) 51P 50V J
C601	0CE475DK618	C,ELECTROLYTIC 4.7UF STD 50V M
C602	0CE226DK618	CAPACITOR,ELECTROLYTIC 22UF STD 50V M FL TP5
C603	0CQ2231N519	CAPACITOR POLYESTER(MYLAR) 0.022MF 100V K POLY TP
C604	0CE106DH618	CAPACITOR,ELECTROLYTIC 10UF STD 25V M FL TP5
C605	0CQ1041N509	C,POLYESTER(MYLAR) 0.1MF 100V L
C606	0CE227DJ618	C,ELECTROLYTIC 220UF STD 35V M FL TP5

RPL

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

LOCA. NO	PART NO	DESCRIPTION
C607	0CE477DF618	C,ELECTROLYTIC 470UF STD 16V M
C608	0CN1030F679	C,TUBULA(HIGH DIELE) 0.01MF 16V M
C609	0CE476DF618	C,ELECTROLYTIC 47UF STD 16V M
C613	0CQ1031N509	C,POLYESTER(MYLAR) 0.01U 100V K
C701	0CQ4731N509	C,POLYESTER(MYLAR) 0.047U 100V K
C703	0CE2261R618	C,ELECTROLYTIC 22M SM 250V M
C704	0CE108DH618	C,ELECTROLYTIC 1000UF STD 25V M
C705(14")	0CE227DF618	C,ELECTROLYTIC 220UF KME 16V M
C705(20")	0CE227BF618	C,ELECTROLYTIC 220UF STD 16V M
C706	0CE108DJ618	C,ELECTROLYTIC 1000UF STD 35V M FL TP5
C707	0CK5610W515	C,CERAMIC(HIGH DIELE) 560PF 500V K
C708	0CK5610W515	C,CERAMIC(HIGH DIELE) 560PF 500V K
C709	0CK3320W515	CAPACITOR CERAMIC(HIGH DIELE) 3300P 500V K B TS
C802	181-017A	C,MPP AC250V 0.1UF M
C803	0CK10201515	C,CERAMIC(HIGH DIELE) 1000P 1KV K
C804	0CK10201515	C,CERAMIC(HIGH DIELE) 1000P 1KV K
C805	0CK10201515	C,CERAMIC(HIGH DIELE) 1000P 1KV K
C806	181-474B	CAPACITOR CE(400V/200UF)SRF LEAD TYPE
C807	181-091D	C,DE0905 R 102K 1KV
C808	0CK1020W515	C,CERAMIC(HIGH DIELE) 1000PF 500V K
C809	0CE106DN618	C,ELECTROLYTIC 10UF STD 100V M FL TP5
C810	0CE227DF618	C,ELECTROLYTIC 220UF STD 16V M
C811	181-120E	CAPACITOR ACT 4KV E 222M FL10
⚠ C812	181-120G	CAPACITOR ACT 4KV E 472M FL10
⚠ C813	181-120G	CAPACITOR ACT 4KV E 472M FL10
C814	0CE107DJ618	C,ELECTROLYTIC 100UF STD 35V M
C851	181-091D	C,DE0905 R 102K 1KV
C852	0CK4710W515	C,CERAMIC(HIGH DIELE) 470PF 500V K
C853	181-091C	C,DE0705 R 471K 1KV
C854	0CK4710W515	C,CERAMIC(HIGH DIELE) 470PF 500V K
C855	0CK4710W515	C,CERAMIC(HIGH DIELE) 470PF 500V K
C856	0CE107DN618	CAPACITOR,ELECTROLYTIC 100UF STD 100V M FL TP5
C857	0CE228DF618	C,ELECTROLYTIC 2200UF STD 16V M
C858	0CE108DH618	C,ELECTROLYTIC 1000UF STD 25V M
C859	0CE108DJ618	C,ELECTROLYTIC 1000UF STD 35V M FL TP5
C860	0CE227DP650	C,ELECTROLYTIC 220UF STD 160V M
C861	0CE1071P650	C,ELECTROLYTIC 100M SM 160V M
C862	181-007H	CAPACITOR MPE 50V 0.47UF J(TR)
C863	0CQ1031N509	C,POLYESTER(MYLAR) 0.01U 100V K
C864	0CE106DF618	C,ELECTROLYTIC 10UF STD 16V M
C865	0CE4741K636	CAPACITOR,ELECTROLYTIC 0.47UF SM 50V M FM5 BP(D) TP
C901(14")	0CC3010K405	C,CERAMIC(TEMP.COMP) 300P 50V J SL TS
C901(20")	0CC3010K405	C,CERAMIC(TEMP.COMP) 300P 50V J SL TS
C902	0CN2710K519	C,TUBULA(HIGH DIELE) 270PF 50V K
C903(14")	0CC3010K405	C,CERAMIC(TEMP.COMP) 300P 50V J SL TS
C903(20")	0CC3310K405	C,CERAMIC(TEMP.COMP) 300P 50V J SL TS
C904	0CE476DF618	C,ELECTROLYTIC 47UF STD 16V M
⚠ C905(14")	0CK22202510	C,CERAMIC(HIGH DIELE) 2200PF 2KV K
⚠ C905(20")	181-003T	CAPACITOR 2KV B 222K TP7.5

DIODES

D301	0DD150009CA	DIODE RGP15J
D302	0DD414809ED	DIODE DS4148
D303	0DD414809ED	DIODE DS4148
D401	0DD414809ED	DIODE DS4148
D402	0DD414809ED	DIODE DS4148
D403	0DD414809ED	DIODE DS4148
D404	0DD414809ED	DIODE DS4148
D405	0DD150009CA	DIODE RGP15J
D501	0DD414809ED	DIODE DS4148
D502	0DD414809ED	DIODE DS4148
D503	0DD414809ED	DIODE DS4148
D504	0DD414809ED	DIODE DS4148
D505	0DD414809ED	DIODE DS4148
D506	0DD414809ED	DIODE DS4148
D701	0DD060009AC	DIODE TVR06J 0.6A/600V 250NS
D702	0DD060009AC	DIODE TVR06J 0.6A/600V 250NS
D703	0DD060009AC	DIODE TVR06J 0.6A/600V 250NS
⚠ D801	0DD260000BB	DIODE BRIDGE D2SBA60(STK) SHINDENKEN
D805	0DD150009CE	DIODE GP15J (1.5A/600V)
D806	0DD060009AC	DIODE TVR06J 0.6A/600V 250NS
D807	0DD060009AC	DIODE TVR06J 0.6A/600V 250NS
D808	0DD060009AC	DIODE TVR06J 0.6A/600V 250NS
D809	0DD100009AL	DIODE EH-1ZV
D851	0DD410000AD	DIODE RU4AM,LF-L1
D852	0DD100009AE	DIODE RU-1A V
D853	0DD420000BB	DIODE D4L20U
D854	0DD420000BB	DIODE D4L20U
D855	0DD150009CA	DIODE RGP15J
D856	0DD060009AC	DIODE TVR06J 0.6A/600V 250NS
D857	0DD414809ED	DIODE DS4148
D858	0DD414809ED	DIODE DS4148
D901	0DD414809ED	DIODE DS4148
D902	0DD414809ED	DIODE DS4148
D903	0DD414809ED	DIODE DS4148
D904	0DD414809ED	DIODE DS4148
D905	0DD414809ED	DIODE DS4148
D906	0DD414809ED	DIODE DS4148
ZD301	0DZ360009DA	DIODE ZENER MTZ3.6B
ZD302	0DZ910009BA	DIODE ZENER MTZ9.1B
ZD402	0DZ910009BA	DIODE ZENER MTZ9.1B
ZD403	0DZ360009DA	DIODE ZENER MTZ3.6B
ZD404	0DZ240009BC	DIODE ZENER MTZ2.4B 2.4V K-ROHM TP
ZD501	0DZ510009AB	DIODE ZENER MTZ5.1B
ZD502	0DZ510009AB	DIODE ZENER MTZ5.1B
ZD503	0DZ510009AB	DIODE ZENER MTZ5.1B
ZD504	0DZ360009DA	DIODE ZENER MTZ3.6B
ZD801	0DZ680009AA	DIODE ZENER MTZ6.8B
ZD851	0DZ620009AA	DIODE ZENER MTZ6.2B

FERRITE CORES

FB401	125-022K	CORE FERRITE 1UH
FB402	125-123A	CORE FERRITE BFD3565R2F
FB501	125-022K	CORE FERRITE 1UH

RPL

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

LOCA. NO	PART NO	DESCRIPTION
FB502	125-123A	CORE FERRITE BFD3565R2F
FB601	125-123A	CORE FERRITE BFD3565R2F
FB701	125-022K	CORE FERRITE 1UH
FB801	125-022K	CORE FERRITE 1UH
FB802	125-123A	CORE FERRITE BFD3565R2F
FB803	125-123A	CORE FERRITE BFD3565R2F
FB851	125-123A	CORE FERRITE BFD3565R2F
FUSES		
⚠ F801	131-098B	FUSE 4A/250V HBC TIME DELAY 5X20
⚠ F851	131-096E	FUSE MICRO 125V 4.0A
RESISTORS		
⚠ FR701	ORF0470H609	R,FUSIBLE 0.47 1/2W 5
⚠ FR702	ORF0511J607	R,FUSIBLE 5.10 1W 5%
⚠ FR703(14")	180-D02J	RESISTOR RNF RND(S) CR 2W 1.6 J TA31
⚠ FR703(20")	180-D02E	RESISTOR RNF RND(S) CR 2W 1.0 J TA31
⚠ FR704	ORF0470J607	R,FUSIBLE 0.47 1W 5%
⚠ FR705	ORF0470H609	R,FUSIBLE 0.47 1/2W 5
⚠ FR851	ORF0470J607	R,FUSIBLE 0.47 1W 5%
⚠ FR852	ORF0470J607	R,FUSIBLE 0.47 1W 5%
⚠ FR854	ORF0470J607	R,FUSIBLE 0.47 1W 5%
R301	ORD1000H609	R,CARBON FILM 100 1/2W 5
R302	ORD1201F609	R,CARBON FILM 1.2K 1/6W 5
R303	ORD3901F609	R,CARBON FILM 3.9K 1/6W 5
R304	ORD3901F609	R,CARBON FILM 3.9K 1/6W 5
R305	ORS2700J607	R,METAL FILM OXIDE 270 1W 5%
R306	ORD1001H609	R,CARBON FILM 1.0K 1/2W 5
R307	ORD4701F609	R,CARBON FILM 4.7K 1/6W 5
R308	ORD3903F609	R,CARBON FILM 390K 1/6W 5
R309	ORD2002F609	R,CARBON FILM 20K 1/6W 5
R310	ORD2402F609	R,CARBON FILM 24K 1/6W 5
R311	ORD1803F609	R,CARBON FILM 180K 1/6W 5
R312	ORD3602F609	R,CARBON FILM 36K 1/6W 5
R313	ORD4701H609	R,CARBON FILM 4.7K 1/2W 5
R314	ORD0221H609	R,CARBON FILM 2.2 1/2W 5
R315	ORD2001F609	R,CARBON FILM 2.0K 1/6W 5
R316	ORD1002F609	R,CARBON FILM 10K 1/6W 5
R317	ORD4702F609	R,CARBON FILM 47K 1/6W 5
R318	ORD1002F609	R,CARBON FILM 10K 1/6W 5
R319	ORD6201F609	R,CARBON FILM 6.2K 1/6W 5
R320	ORD1001F609	R,CARBON FILM 1.0K 1/6W 5
R322	ORD4701F609	R,CARBON FILM 4.7K 1/6W 5
R323	ORD3600F609	R,CARBON FILM 360 1/6W 5
R324	ORD1801F609	R,CARBON FILM 1.8K 1/6W 5
R325	ORD1002F609	R,CARBON FILM 10K 1/6W 5
R401	ORD0392H609	R,CARBON FILM 39 1/2W 5
R402	ORD4301H609	R, CARBON FILM 4.3K 1/2W 5 TA52
R403	ORS5601J607	R,METAL FILM OXIDE 5.60K 1W 5% TA62
R404	ORD1500F609	R,CARBON FILM 150 1/6W 5
R405	ORS5601J607	R,METAL FILM OXIDE 5.60K 1W 5% TA62
R406	ORD4701F609	R,CARBON FILM 4.7K 1/6W 5

LOCA. NO	PART NO	DESCRIPTION
R407	ORD3900F609	R,CARBON FILM 390 1/6W 5
R408	ORD1800H609	R,CARBON FILM 180 1/2W 5
R409	ORD5600F609	R,CARBON FILM 560 1/6W 5
R410	ORD1002F609	R,CARBON FILM 10K 1/6W 5
R411	ORD1002F609	R,CARBON FILM 10K 1/6W 5
R412	ORD6200F609	R,CARBON FILM 620 1/6W 5
R413	ORD2001H609	R,CARBON FILM 2.0K 1/2W 5
R414	ORD1002F609	R,CARBON FILM 10K 1/6W 5
R415	ORD6201F609	R,CARBON FILM 6.2K 1/6W 5
R416	ORD3601F609	R,CARBON FILM 3.6K 1/6W 5
R417	ORD1001F609	R,CARBON FILM 1.0K 1/6W 5
R418	ORS2002H609	R,FIX METAL FILM OXIDE 20K 1/2W 5 TA52
R419	ORD1801H609	R,CARBON FILM 1.8K 1/2W 5
R502	ORD1000F609	R,CARBON FILM 100 1/6W 5
R503	ORD1001F609	R,CARBON FILM 1.0K 1/6W 5
R504	ORD3601F609	R,CARBON FILM 3.6K 1/6W 5
R505	ORD2403F609	R,CARBON FILM 240K 1/6W 5
R506	ORD2001F609	R,CARBON FILM 2.0K 1/6W 5
R507	ORD1801F609	R,CARBON FILM 1.8K 1/6W 5
R508	ORD1501F609	R,CARBON FILM 1.5K 1/6W 5
R509	ORD8203F609	R,CARBON FILM 820K 1/6W 5
R510	ORD6801F609	R,CARBON FILM 6.8K 1/6W 5
R511	ORD8201F609	R,CARBON FILM 8.2K 1/6W 5
R512	ORD5602F609	R,CARBON FILM 56K 1/6W 5
R514	ORD2401F609	R,CARBON FILM 2.4K 1/6W 5
R515	ORD8200F609	R,CARBON FILM 820 1/6W 5
R517	ORD2401F609	R,CARBON FILM 2.4K 1/6W 5
R518	ORD6804F609	R,CARBON FILM 6.8M 1/6W 5 TA52
R519	ORD4704F609	R,CARBON FILM 4.7M 1/6W 5
R520	ORD4704F609	R,CARBON FILM 4.7M 1/6W 5
R521	ORD3301F609	R,CARBON FILM 3.3K 1/6W 5
R522	ORD4700F609	R,CARBON FILM 470 1/6W 5
R523	ORD4700F609	R,CARBON FILM 470 1/6W 5
R524	ORD4700F609	R,CARBON FILM 470 1/6W 5
R525	ORD7500F609	R,CARBON FILM 750 1/6W 5
R526	ORD1000F609	R,CARBON FILM 100 1/6W 5
R527	ORD1000F609	R,CARBON FILM 100 1/6W 5
R528	ORD1000F609	R,CARBON FILM 100 1/6W 5
R529	ORD1000F609	R,CARBON FILM 100 1/6W 5
R530	ORD1000F609	R,CARBON FILM 100 1/6W 5
R531	ORD2202F609	R,CARBON FILM 22K 1/6W 5
R532	ORD5601F609	R,CARBON FILM 5.6K 1/6W 5
R533	ORD2401F609	R,CARBON FILM 2.4K 1/6W 5
R534	ORD1001F609	R,CARBON FILM 1.0K 1/6W 5
R535	ORD7500F609	R,CARBON FILM 750 1/6W 5
R536	ORD7500F609	R,CARBON FILM 750 1/6W 5
R537	ORD7500F609	R,CARBON FILM 750 1/6W 5
R541	ORD1001F609	R,CARBON FILM 1.0K 1/6W 5
R542	ORD1000F609	R,CARBON FILM 100 1/6W 5
R543	ORD1000F609	R,CARBON FILM 100 1/6W 5
R544	ORD8201F609	R,CARBON FILM 8.2K 1/6W 5
R545	ORD1000F609	R,CARBON FILM 100 1/6W 5

RPL

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Replace only with part number specified.

LOCA. NO	PART NO	DESCRIPTION
R546	0RD1002F609	R,CARBON FILM 10K 1/6W 5
R547	0RD5601F609	R,CARBON FILM 5.6K 1/6W 5
R548	0RD6800F609	R,CARBON FILM 680 1/6W 5
R549	0RD3000F609	R,CARBON FILM 300 1/6W 5
R550	0RD2200H609	R,CARBON FILM 220 1/2W 5
R551	0RD1002F609	R,CARBON FILM 10K 1/6W 5
R552	0RD1202F609	R,CARBON FILM 12K 1/6W 5
R554	0RD1002F609	R,CARBON FILM 10K 1/6W 5
R555	0RD2002F609	R,CARBON FILM 20K 1/6W 5
R556	0RD3301F609	R,CARBON FILM 3.3K 1/6W 5
R557	0RD3301F609	R,CARBON FILM 3.3K 1/6W 5
R558	0RD3301F609	R,CARBON FILM 3.3K 1/6W 5
R559	0RD2701F609	R,CARBON FILM 2.7K 1/6W 5
R560	0RD2002F609	R,CARBON FILM 20K 1/6W 5
R561	0RD3302F609	R,CARBON FILM 33K 1/6W 5
R562	0RD4701F609	R,CARBON FILM 4.7K 1/6W 5
R563	0RD5101F609	R,CARBON FILM 5.1K 1/6W 5
R564	0RD5101F609	R,CARBON FILM 5.1K 1/6W 5
R565	0RD2701F609	R,CARBON FILM 2.7K 1/6W 5
R566	0RD2701F609	R,CARBON FILM 2.7K 1/6W 5
R601	0RD1003F609	R,CARBON FILM 100K 1/6W 5
R602	0RD1003F609	R,CARBON FILM 100K 1/6W 5
R603	0RD1003F609	R,CARBON FILM 100K 1/6W 5
R604	0RD0221H609	R,CARBON FILM 2.2 1/2W 5
R605	0RD8202F609	R,CARBON FILM 82K 1/6W 5
R606	0RD8201F609	R,CARBON FILM 8.2K 1/6W 5
R607	0RD2000H609	R,CARBON FILM 200 1/2W 5
R608	0RD2000H609	R,CARBON FILM 200 1/2W 5
R701	0RD1002F609	R,CARBON FILM 10K 1/6W 5
R702(14")	0RD7502H609	R,CARBON FILM 75K 1/2W 5
R702(20")	0RD5602H609	R,CARBON FILM 56K 1/2W 5 M15
R703(14")	0RD7502H609	R,CARBON FILM 75K 1/2W 5
R703(20")	0RD5602H609	R,CARBON FILM 56K 1/2W 5 M15
R704	0RD2403H609	R,CARBON FILM 240K 1/2W 5 M15
R802	180-A03A	R,RW RECT G 5W 2.2 J DOUBLE
R803	0RD1503H609	R,CARBON FILM 150K 1/2W 5
R804	0RD1503H609	R,CARBON FILM 150K 1/2W 5
R805	0RS2202K607	R,METAL FILM OXIDE 22K 2W 5%
R806	0RS2202K607	R,METAL FILM OXIDE 22K 2W 5%
R807	0RS2002H609	R,METAL FILM OXIDE 20K 1/2W 5 TA52
R808	0RD1601F609	R,CARBON FILM 1.6K 1/6W 5
R809	0RD1001F609	R,CARBON FILM 1.0K 1/6W 5
R810	0RS0222K607	R, METAL FILM OXIDE 22 2W 5%
R811	180-A01H	R,RW ROUND G 2W 0.27 J
R812	0RD1001F609	R,CARBON FILM 1.0K 1/6W 5
⚠ R813	180-C01C	RESISTOR RC 1/2W 8.2M K TA52
R815	0RD0151H609	R,CARBON FILM 1.5 1/2W 5 TA52
R851	0RD6801F609	R,CARBON FILM 6.8K 1/6W 5
R852	0RD3301F609	R,CARBON FILM 3.3K 1/6W 5
R853	0RD6201F609	R,CARBON FILM 6.2K 1/6W 5
R854	0RD2001F609	R,CARBON FILM 2.0K 1/6W 5
R855	0RD2701F609	R,CARBON FILM 2.7K 1/6W 5

LOCA. NO	PART NO	DESCRIPTION
R856	0RD1002F609	R,CARBON FILM 10K 1/6W 5
R857	0RD4701F609	R,CARBON FILM 4.7K 1/6W 5
R858	0RD4701F609	R,CARBON FILM 4.7K 1/6W 5
R859	0RD4701F609	R,CARBON FILM 4.7K 1/6W 5
R860	0RD4701F609	R,CARBON FILM 4.7K 1/6W 5
R861	0RD1002F609	R,CARBON FILM 10K 1/6W 5
R862	0RD2201F609	R,CARBON FILM 2.2K 1/6W 5
R863	0RS5600J607	R,METAL FILM OXIDE 560 1W 5%
R901	0RD2200F609	R,CARBON FILM 220 1/6W 5
R902	0RD2200F609	R,CARBON FILM 220 1/6W 5
R903	0RD2200F609	R,CARBON FILM 220 1/6W 5
R904(14")	0RS8201K607	R,METAL FILM OXIDE 8.20K 2W 5%
R904(20")	0RS1002K607	R,METAL FILM OXIDE 10K 2W 5%
R905(14")	0RS8201K607	R,METAL FILM OXIDE 8.20K 2W 5%
R905(20")	0RS1002K607	R,METAL FILM OXIDE 10K 2W 5%
R906(14")	0RS8201K607	R,METAL FILM OXIDE 8.20K 2W 5%
R906(20")	0RS1002K607	R,METAL FILM OXIDE 10K 2W 5%
R907	0RD2701H609	R,CARBON FILM 2.7K 1/2W 5
R908	0RD2701H609	R,CARBON FILM 2.7K 1/2W 5
R909	0RD2701H609	R,CARBON FILM 2.7K 1/2W 5
R910	0RD1801F609	R,CARBON FILM 1.8K 1/6W 5
R911	0RD3900F609	R,CARBON FILM 390 1/6W 5
R912	0RD1801F609	R,CARBON FILM 1.8K 1/6W 5
R913	0RD1800F609	R,CARBON FILM 180 1/6W 5
R914	0RD3900F609	R,CARBON FILM 390 1/6W 5
R915	0RD3900F609	R,CARBON FILM 390 1/6W 5
R916	0RD1801F609	R,CARBON FILM 1.8K 1/6W 5
R917	0RD1000F609	R,CARBON FILM 100 1/6W 5
VR301	180-F02G	RESISTOR RH0638CS3R2HB B472 HORI(TA)
VR901	180-F02G	RESISTOR RH0638CS3R2HB B472 HORI(TA)
VR902	180-F02G	RESISTOR RH0638CS3R2HB B472 HORI(TA)
VR903	180-F02G	RESISTOR RH0638CS3R2HB B472 HORI(TA)
VR904	180-F02C	RESISTOR RH0638CS2R25B B471 HORI(TA)
VR905	180-F02C	RESISTOR RH0638CS2R25B B471 HORI(TA)

ICs

IC1401	0IKE780900E	IC,KEC KIA7809PI 3P(TO-220IS)1A,9V
IC1501	0ITO888000B	IC,TOSHIBA TA8880CN 64SD P/N/S V/C/D
IC1503	0IKE780500P	IC,KEC KIA78L05BP(TA)3P 5V,150MA
IC1504	0IMI505540M	IC,MITSUBISHI M50554-242SP 32SD OSD(NI-55A)
IC1601	0ISG200600A	IC, SGS-THOMSON TDA2006,SOUND
IC1602	0INE140600A	IC, NEC UPC1406HA
⚠ IC1801	0ISK670700B	IC,SANKEN STR/S6707(LF.953) 9P (R5,R6)
⚠ IC1802	0ITO721400A	IC,TOSHIBA TLP721(D4-GR) 4D PHOTO(SEMI0)
⚠ IC1803	0ITO721400A	IC,TOSHIBA TLP721(D4-GR) 4D PHOTO(SEMI0)
⚠ IC1851	0ISK115000A	IC,SANKEN SE115N(LF12) 3P 115V ERROR AMP
IC301	0ITO844500A	IC,TOSHIBA TA8445K 12S 2.2A R/G+V.OUT

COIL & TRANSFORMERS

DL501	150-Y01R	COIL DELAY LINE 600NS 4.43T
L401	0LA0102K139	INDUCTOR 10UH K

RPL

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LOCA. NO	PART NO	DESCRIPTION
⚠ L402(14")	150-L01W	COIL H-LINEARITY 57UH
⚠ L402(20")	150-L02C	COIL H-LINEARITY 170UH
L501	0LA1000K119	INDUCTOR 100UH K
L502	0LA0332K119	INDUCTOR 33UH K
L503	0LA1000K119	INDUCTOR 100UH K
L504	0LA1000K119	INDUCTOR 100UH K
L505	0LA0102K119	INDUCTOR 10UH K
L507	0LA1000K119	INDUCTOR 100UH K
L508	0LA0102K119	INDUCTOR 10UH K
L509	0LA0561K119	INDUCTOR 5.6UH K
L601	0LA0102K119	INDUCTOR 10UH K
L602	0LA0102K119	INDUCTOR 10UH K
L603	0LA0102K119	INDUCTOR 10UH K
L604	0LA0101K119	INDUCTOR 1.0UH K
⚠ L801	150-F06K	COIL LINE FILTER SQE2930 60MH
⚠ L802	150-F06B	COIL LINE FILTER SQE2424 19-35MH
L852	150-C02E	COIL CHOKE 50UH R 1217
L901	150-C02A	COIL CHOKE 10UH R0814
⚠ T801	151-A10C	TRANSFORMER SMPS COIL EER4445 STR-S6707 W
TRANSISTORS		
Q1301	0TR102009AB	TRANSISTOR KRC102M,TP(KRC1202),KEC
Q1302	0TR319809AA	TRANSISTOR KTC3198-TP-Y (KTC1815)KEC
Q1303	0TR102009AB	TRANSISTOR KRC102M,TP(KRC1202),KEC
Q1304	0TR319809AA	TRANSISTOR KTC3198-TP-Y (KTC1815)KEC
Q1305	0TR102009AB	TRANSISTOR KRC102M,TP(KRC1202),KEC
⚠ Q1402	0TR320709AA	TRANSISTOR KTC3207,TP(KTC2482),KEC
Q1403	0TR319809AA	TRANSISTOR KTC3198-TP-Y (KTC1815)KEC
Q1501	0TR319809AA	TRANSISTOR KTC3198-TP-Y (KTC1815)KEC
Q1502	0TR319809AA	TRANSISTOR KTC3198-TP-Y (KTC1815)KEC
Q1503	0TR102009AB	TRANSISTOR KRC102M,TP(KRC1202),KEC
Q1507	0TR319809AA	TRANSISTOR KTC3198-TP-Y (KTC1815)KEC
Q1508	0TR126609AA	TRANSISTOR KTA1266-TP-Y (KTA1015) KEC
Q1509	0TR126609AA	TRANSISTOR KTA1266-TP-Y (KTA1015) KEC
Q1510	0TR126609AA	TRANSISTOR KTA1266-TP-Y (KTA1015) KEC
Q1511	0TR126609AA	TRANSISTOR KTA1266-TP-Y (KTA1015) KEC
Q1512	0TR126609AA	TRANSISTOR KTA1266-TP-Y (KTA1015) KEC
Q1513	0TR319809AA	TRANSISTOR KTC3198-TP-Y (KTC1815)KEC
Q1514	0TR319809AA	TRANSISTOR KTC3198-TP-Y (KTC1815)KEC
⚠ Q1801	0TR385200AA	TRANSISTOR 2SC3852A SANKEN
Q1851	0TR322809AA	TRANSISTOR KTC3228-0 TP(KTC2383),KEC
Q1852	0TR319809AA	TRANSISTOR KTC3198-TP-Y (KTC1815)KEC
Q1853	0TR319809AA	TRANSISTOR KTC3198-TP-Y (KTC1815)KEC
Q1854	0TR319809AA	TRANSISTOR KTC3198-TP-Y (KTC1815)KEC
Q1855	0TR319809AA	TRANSISTOR KTC3198-TP-Y (KTC1815)KEC
Q1856	0TR322709AA	TRANSISTOR KTC3227-Y,TP(KTC1627A),KEC
Q1857	0TR319809AA	TRANSISTOR KTC3198-TP-Y (KTC1815)KEC
Q1858	0TR127009AA	TRANSISTOR KTA1270-TP-Y (KTA562TM)KEC
Q1901	0TR322900AA	TRANSISTOR KTC3229 (KTC2068),KEC
Q1902	0TR322900AA	TRANSISTOR KTC3229 (KTC2068),KEC
Q1903	0TR322900AA	TRANSISTOR KTC3229 (KTC2068),KEC
Q1401	0TR249900AA	TRANSISTOR KTD2499 TO-3P(H)IS TOSHIBA

LOCA. NO	PART NO	DESCRIPTION
PINS & CONNECTORS		
P401	366-009D	PIN 1P
P501	387-660Q	CONNECTOR ASSY GIL-J,8P,MOLEX(2.0)
P502	387-660B	CONNECTOR ASSY ASSY,GIL-J,10P,MOLEX(2.0)
P602	366-922B	PIN WAFER IL-G(AN) 3P 3.5M/M
P801	366-009D	PIN 1P
P802	366-009D	PIN 1P
P902	366-009D	PIN 1P
TRANSMITTERS		
	0IGS848906A	IC, GOLDSTAR ELECTRON GS8489-06A(GMS30140-R004) 24SO
	303-H73A	COVER BATTERY(105-212)
ACCESSORIE PARTS		
	105-212U(14")	TRANSMITTER ASSY(MV-55A,TVCR)
	105-212R(20")	TRANSMITTER ASSY(MV-55A,TVCR)
	132-204H	ANTENNA ASSY ROD(STS,3SEC,F/L 650,BK)(FOR LGEDG)
	132-199D	ANTENNA ASSY ROD(W/ADAPTER L=650)(FOR LGEES)
	450-018C	ADAPTER ANT.(300 TO 75) PAL
MISCELLANEOUS		
	1PTF0402816	SCREW,TRUSS HEAD TAP TITE + D4 L12 MSWR3/BK
	109-818C(14")	PCB ASSY "MAIN MV-55A 14"" M-IN(KB-XX)"
	109-B13C(20")	PCB ASSY "MAIN MV-55A 20"" M-IN(KB-XX)"
	120-180F	SPEAKER C091P03K1453
	150-D02B(14")	COIL "DEGAUSSING,CU 14"" 42T 5.7OHM"
	150-D02M(20")	COIL "DEGAUSSING,CU 21"" 60T 150H
⚠	153-113V(14")	DY DCAD2*113V-14SNAB
⚠	153-276A(20")	DY DCAM-20PLAA
	170-A01A	LEAD SET "CPT EARTH(14"")"
	170-799H	LEAD SET "CPT EARTH19"
⚠	174-322C	CORD POWER W/FILTER L=50(179B)VDE
⚠	2055-V0744D(14")	CPT A34KPU02XX 31N7ND(+0.4GAUSS)
⚠	2055-V0744F(14")	CPT A34KPU02XX 31M7ND(+0.3GAUSS)
⚠	2055-V1221B(20")	CPT A48QAD220X 03N7ND(+0.4GAUSS)
	300-C19M(14")	CABINET ASSY FRONT,KL-14V30
	300-C26N(20")	CABINET ASSY KL-20V30 (LGEFS)
	302-A94A	CASE SHIELD(HV-55A,SIDE)
	303-J78B(14")	COVER BACK(FOR LGEES)
	303-J78H(14")	COVER ASSY KB-14V30(GMY)(FOR LGEDG)
	303-J93B(20")	COVER ASSY KJ-20V30/32
	303-M48A	COVER SHIELD(MV-55A,TOP)
	312-399B	FRAME MAIN
	313-330J	PANEL ASSY,VCR (KL-14V30)
	315-656G	DOOR CST,KL-14V30/20V30
	316-370B	WINDOW PRE-AMP(PMMA)
	316-477A	WINDOW LED(KN-14V30/20V30 APGMG)
	320-070E	SPRING COIL
	320-161A	SPRING COIL
	332-057B	SCREW ASSY,HEXAGON HEAD
	340-580C	BRACKET SPEAKER KL-14V30

RPL

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Replace only with part number specified.

LOCA NO	PART NO	DESCRIPTION
	340-661C	BRACKET SPEAKER DECO KL-14V30
	341-184D	HOLDER LEAD TWISTER
	341-721A	HOLDER D-COIL (FOR AUTO.L=65)
	341-721B	HOLDER D-COIL (FOR AUTO.L=130)
	341-856B	HOLDER POWER CORD(KF-14V30/20V30)
	341-869A	HOLDER ANODE RING,SONY
⚠	381-100F(14")	SOCKET CPT 022.5 S/LESS PCS625-11A
⚠	381-226D(20")	SOCKET CPT PCS628-01S/LESS BULK(N
	387-C03F	CONNECTOR ASSY 3P (L=350)FOR SPEAKER
	387-D10D	CONNECTOR ASSY 10P IL-J TO IL-J(250)
	399-011C	VCR ASSY VT-223P 3PNSA,SCART,PAL-B/G,SE
	441-295A	BUTTON MAIN POWER(KJ-14V10)
	441-469A	BUTTON POWER(KN-14V30/20V30 APGMG)
	441-470A	BUTTON EJECT(KN-14V30/20V30 APGMG)
	441-471A	BUTTON CONTROL(KN-14V30/20V30 APGMG)
	441-472A	BUTTON CH.VOL.ENTER(KN-14V30 APGMG)
	454-041A	INDICATOR POWER LED(HITACHI 14TVCR)
Z501	166-F01G	FILTER EMI,DSS306-93FZ103N 100V TA
JK601	380-400A	JACK HEADPHONE 3.5 STEREO C/A INS'
⚠ RL851	141-005B	RELAY VS12MB
⚠ SW801	140-289A	SWITCH SDDF3PASP013(GS-ALPS) TV8
⚠ TH801	163-051A	THERMISTOR J5 03 P5 3D 140M 290S
⚠ T401	151-C02B	TRANSFORMER H-DRIVE,EI-19,BULK
⚠ T701(14")	154-207A	FBT FCK*207A-14MP6
⚠ T701(20")	154-207D	FBT FCK1-21MP6
⚠ VA801	164-003D	VARISTOR SVC 561D-14A
X401	166-E02G	FILTER RESO CSB503F30 503.5
X501	156-A01H	CRYSTAL 4.433619 16PF 80 OHM BULK

RPL

2. VCR
NON ELECTRICAL PARTS

AL	LOCA. NO	PART NO	DESCRIPTION	SPECIFICATION	REMARKS
			VCR Main Frame Parts		
	A00	412-124J		ASSY D-17 P (2HD VCR PAL,TVCR)	
OR	A00	412C124J		ASSY D-17 P (2HD VCR PAL,TVCR)	
OR	A00	412G124J		ASSY D-17 P (2HD VCR PAL,TVCR)	
OR	A00	412H124J		ASSY D-17 P (2HD VCR PAL,TVCR)	
OR	A00	412W124J		ASSY D-17 P (2HD VCR PAL,TVCR)	
	A40	315-334A	FRAME	ASSY MAIN	
	A41	3501R-0156B	BOARD ASSY	KEY-BOARD VT-223S	
	A45	3501R-0413A	BOARD ASSY	PRE-AMP	
	A46	3501R-0412A	BOARD ASSY	MAIN BOARD	
	250	217-527B	CASE	ASSY TOP (VT-222P)	
	260	315-329A	FRAME	MAIN	NSP
	261	221-957C	COVER	BOTTOM(VT-223M)	
	310	221-787A	COVER	PRE-AMP(A)	
	311	217-449B C	CASE	PRE-AMP(NEW-CASE)	
	312	221-788A	COVER	PRE-AMP(B)	
	313	257-006A	PLATE	BOTTOM GROUND	
	314	321-532A	BRACKET	HOUSING	
	320	258-696A	PANEL	DISTRIBUTOR	
	323	256-743C	PLATE	HEAT SINK	
	449	353-046K	SCREW	SPECIAL(3X10 BK)	
	452	353-051A	SCREW	SPECIAL	
	462	353-136A	SCREW	SPECIAL(FBK)	
			Moving Mechanism Section Parts(I)		
	A01	413-312G	DRUM	ASSY V-2CH(PAL 2CH)	
OR	A01	413B312G	DRUM	ASSY V-2CH (PAC 2HD)	
	A02	386-296C	ARM	ASSY CL	
OR	A03	311-005G	CHASSIS ASSY'	D17	NSP
	A03	311-005M	CHASSIS ASSY'	D17	NSP
	A04	456-048A	REEL	ASSY S17	
	A05	456-045A	REEL	ASSY T17	
	A06	321-397D	BRACKET	ASSY F/R	
	A07	225-228A	BASE	ASSY A/C	
OR	A08	225-248A	BASE	ASSY,P2	
	A08	225-248B	BASE	ASSY P2 (W-W)	
OR	A09	225-249A	BASE	ASSY,P3	
	A09	225-249B	BASE	ASSY P3 (W-W)	
	A10	414-104A	MOTOR	ASSY LOAD	
	A11	333-209E	LEVER	ASSY PINCH	
	O01	413-315E	DRUM	SUB ASSY(P1)	
OR	O02	414-180A	MOTOR	ASSY DRUM GVD-017(D-17) ALPS	
	O02	414-211A	MOTOR	ASSY DRUM E20XL13 SANKYO METAL	
	O05	225-231B	BASE	ASSY D-BRUSH	
OR	O06	225-220A	BASE	DRUM	NSP
	O06	225-220B	BASE	DRUM (W-W)	NSP
OR	O06	225-220C	BASE	DRUM (Y-H)	NSP
	O07	386-297A	ARM	SUB ASSY CU	
	O08	442-460B	SPRING	CU	
	O10	386-295B	ARM	CL	
	O12	384-071A	GUIDE	17	
	O13	523-082B	HEAD	FE,HVFHF0010AK	

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AL	LOCA.NO	PART NO	DESCRIPTION	SPECIFICATION	REMARKS
OR	013	523-824A	HEAD	F.E MH-131G (D-17)	
	014	378-017A	SLEEVE	P1	
	015	434-178A	ROLLER	P1	
OR	015	434-178B	ROLLER	P1	
	016	389-003B	ADJUST	P(4)	
	018	386-205A	ARM	ASSY TENSION	
	019	442-331C	SPRING	TENSION	
	020	328-052B	BAND	ASSY TENSION	
	021	334-066A	STOPPER	P1	
	027	435-243A	GEAR	IDLE(A)	
	028	435-244A	GEAR	IDLE(B)	
	029	456-040A	REEL	T17	NSP
	030	442-341A	SPRING	REEL	NSP
	030	442-341A	SPRING	REEL	NSP
	031	276-068A	CAP	REEL	NSP
	031	276-068A	CAP	REEL	NSP
	032	456-039A	REEL	S17	NSP
	036	435-240A	GEAR	F/R	
	037	442-336A	SPRING	UP/D	NSP
	038	435-239A	GEAR	UP/D	NSP
	040	333-201B	LEVER	ASSY F/R	NSP
	044	442-338B	SPRING	SSB	NSP
	045	338-081A	BRAKE	S-SOFT	NSP
	046	442-337A	SPRING	SMB	NSP
	047	338-080A	BRAKE	ASSY S-MAIN	NSP
	048	442-339D	SPRING	TSB	NSP
	049	338-083A	BRAKE	ASSY T-SOFT	NSP
	050	321-396A	BRACKET	SUB ASSY F/R	NSP
	054	389-013A	ADJUST	X-ASSY	
	056	378-018A	SLEEVE	P4	
	060	442-343A	SPRING	T/UP	
	061	386-387B	ARM	ASSY T/UP	
	065	442-332A	SPRING	A/C	
	066	225-219A	BASE	SUB ASSY A/C	NSP
	068	523-089A	HEAD	SUB ASSY A/C	
	069	442-362A	SPRING	AZIMUTH	
	070	338-085A	BRAKE	ASSY T-MAIN	
	071	442-344A	SPRING	TMB	
	074	434-173A	ROLLER	ASSY GUIDE	
	074	434-173A	ROLLER	ASSY GUIDE	
OR	074	434-173C	ROLLER	ASSY GUIDE	
OR	074	434-173C	ROLLER	ASSY GUIDE	
	075	353-054B	SCREW	MINIATURE	
	075	353-054B	SCREW	MINIATURE	
	076	225-226B	BASE	SUB ASSY SLALT (L,W-W)	
	077	225-225B	BASE	SUB ASSY SLALT (R,W-W)	
	081	414-105A	MOTOR	SUB ASSY,L	
	082	437-009A	WORM	ASSY	
	083	321-410A	BRACKET	SUB ASSY L/M	
	084	433-023A	WHEEL	WORM	
	087	321-470A	BRACKET	ASSY DEW	
	088	435-448A	GEAR	PINCH (N)	
	090	442-347A	SPRING	PINCH	NSP
	091	386-210A	ARM	ASSY PINCH	NSP
	092	442-346A	SPRING	STOPPER	NSP

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AL	LOCA.NO	PART NO	DESCRIPTION	SPECIFICATION	REMARKS
	093	334-050C	STOPPER	PINCH	NSP
OR	094	434-181A	ROLLER	ASSY PINCH	
	094	434-181B	ROLLER	ASSY PINCH	
	095	276-089B	CAP	PINCH	NSP
	096	333-203A	LEVER	PINCH	NSP
	098	333-344A	LEVER	T-UP (N)	
			Moving Mechanism Section Parts(II)		
	A20	321-401A	BRACKET	ASSY BOTTOM	
	A21	333-208A	LEVER	ASSY RAT	
	A22	338-078A	BRAKE	ASSY CAP	
	A23	386-218A	ARM	ASSY LOAD(R)	
	A24	386-219A	ARM	ASSY LOAD(L)	
	A25	511-997D	PWB ASSY	D-17,VCR	
	100	321-463A	BRACKET	SUB ASSY B	NSP
	102	435-249A	GEAR	RAT1	NSP
	103	442-356A	SPRING	F-LEVER	NSP
	104	356-208A	PIN	F-LEVER	NSP
	106	442-345A	SPRING	RAT	NSP
	107	333-202A	LEVER	RAT	NSP
	108	333-207A	LEVER	F17	NSP
	110	374-005A	CAM	D17	
	111	435-318A	GEAR	ASSY RACK F/L	
	112	435-291A	GEAR	ASSY RACK T	
	113	435-246A	GEAR	PC	
	114	414-120B	MOTOR	CAPSTAN GVC-017P	
	115	452-047A	BELT	CENTER	
	116	256-734A	PLATE	F17	
	117	442-342B	SPRING	FP	
	120	338-089A	BRAKE	SUB ASSY CAP	
	121	442-333A	SPRING	CAPSTAN	
	122	432-038A	PULLEY	GEAR	
	130	337-005A	CLUTCH	ASSY	
	131	340-001A	HOLDER	LED (Q)	
	132	324-642A	HOLDER	R/S	
	133	513-494D	PWB	JUNCTION D-17 VCR	NSP
	134	556-133A	SWITCH	MODE	
OR	134	556-133B	SWITCH	MODE, ALPS	
OR	135	0DL451000AA	DIODE LED	IR SENSOR GL451(LONG) SHARP	
	135	0DL550000AB	DIODE LED	IR SENSOR EL-55L(LONG) KOC	
	136	657-102K	SENSOR	SG-105(REEL) KOC	
	137	556-131A	SWITCH	ESE-105SV1	
	138	435-234A	GEAR	LOAD(R)	
	139	442-330A	SPRING	LOADING	
	140	386-274A	ARM	SUB ASSY (R)	
	142	435-235A	GEAR	LOAD(L)	
	143	442-330B	SPRING	LOADING	
	144	386-273A	ARM	SUB ASSY (L)	
	146	333-218A	LEVER	ASSY A-TEN	
			Front Loading Mechanism Section Parts		
OR	A30	219-017F	HOUSING	ASSY (D17)	
	A30	219-017L	HOUSING	ASSY (D17)	
	A32	435-257B	GEAR	ASSY DRIVE (HOOK ADDED)	
	A33	321-406A	BRACKET	ASSY CARRIER	

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AL	LOCA. NO	PART NO	DESCRIPTION	SPECIFICATION	REMARKS
	A34	321-441A	BRACKET	ASSY SIDE	
	A35	515-106B	PWB ASSY	SENSOR	
	150	321-527A	BRACKET	ASSY C-GUIDE	
	201	256-934B	PLATE	TOP	
	204	465-026A	OPENER	DOOR	
	205	321-517B	BRACKET	LEFT (D17)	
	206	321-518A	BRACKET	RIGHT (D17)	
	207	435-278A	GEAR	RACK N/D	
	208	256-910A	PLATE	GND TOP	
	210	321-440A	BRACKET	SIDE	
	213	442-351A	SPRING	OC	
	214	465-028A	OPENER	CST	
	215	442-357A	SPRING	RTD	
	216	465-027A	OPENER	RTD	
	217	324-647A	HOLDER	R	
	218	321-407A	BRACKET	SUPPORT	
	219	321-405A	BRACKET	CARRIER	
	220	324-646A	HOLDER	L	
	221	333-210A	LEVER	DT	
	222	442-358B	SPRING	DT	
	225	384-074A	GUIDE	CST	
	226	442-352A	SPRING	L	
	227	435-254A	GEAR	L	
	228	442-350A	SPRING	S/W	
	229	333-204A	LEVER	S/W	
	230	423-368A	SHAFT	D	
	231	442-353A	SPRING	R	
	232	435-255A	GEAR	R	
	233	435-256B	GEAR	C (HOOK ADDED)	
	234	442-359C	SPRING	CUSHION (D17F/L)	
	235	442-354A	SPRING	CC	
	236	276-086A	CAP	DRIVE	
			Hardwares & Screws		
	401	1MPC0262018	PAN HEAD MACHINE SCREW +	D 2.6 L 6.0 MSWR3/FZY	
	402	353-021D	SCREW	SPECIAL	
	404	353-048D	SCREW	CONE POINT 3X8	
	405	1MDC0262818	PAN HEAD MACHINE SCREW P/WASH+	D2.6 L12 MSWR3/FZY	
	406	1MEC0302018	PAN HEAD MACHINE SCREW S/W +	D 3.0 L 6.0 MSWR3/FZY	
	408	1MBC0302418	BINDING HEAD MACHINE SCREW +	D 3.0 L 8.0 MSWR3/FZY	
	411	353-046B	SCREW	SPECIAL (3X8 FZMY)	
	412	1MBC0302818	BINDING HEAD MACHINE SCREW +	D 3.0 L 12 MSWR3/FZY	
	412	1MBC0302818	BINDING HEAD MACHINE SCREW +	D 3.0 L 12 MSWR3/FZY	
	421	1MPC0302618	PAN HEAD MACHINE SCREW +	D3.0 L10.0,MSWR3/FZY	
	422	1MPC0302418	PAN HEAD MACHINE SCREW +	D 3.0 L 8.0 MSWR3/FZY	
	425	1SRF0302418	BRAIZER HD TAP TITE SCREW +	D 3.0 L 8.0 MSWR3/FZY	
	426	1MPC0302018	PAN HEAD MACHINE SCREW +	D 3.0 L 6.0 MSWR3/FZY	
	452	353-051A	SCREW	SPECIAL	
			Nut. Washer		
	503	354-020E	WASHER	STOPPER	
	504	354-001B	WASHER	P.S D3.1XD6X0.5T	
	505	354-080E	WASHER	STOPPER	
	506	352-025A	NUT	NYLON M3	
	507	354-020J	WASHER	STOPPER(2.6X4.8X0.5)	

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AL	LOCA. NO	PART NO	DESCRIPTION	SPECIFICATION	REMARKS
	508	352-033A	NUT	NUT NYLON(M3)	
	511	354-080C	WASHER	STOPPER	
	512	354-080E	WASHER	STOPPER	NSP
	513	354-080A	WASHER	STOPPER	NSP
	514	354-080B	WASHER	STOPPER	NSP
	516	354-033B	WASHER	STOPPER	

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ELECTERICAL PARTS

AL	LOCA. NO	PART NO	DESCRIPTION
		P.C. BOARD Assembles	
	PBJT0	515-700B	JUNCTION 2 D-17S
		Semiconductors	
		Capacitors	
	C101	0CN2230H948	0.022M 25V Z F TA26
	C102	0CE1076F638	100M SMS 16V M FM5 TP(5)
	C103	0CE4766K638	47M SMS 50V M FM5 TP
	C104	0CN2230H948	0.022M 25V Z F TA26
	C105	0CN2230H948	0.022M 25V Z F TA26
	C106	0CE4766K638	47M SMS 50V M FM5 TP
	C107	0CE1076F638	100M SMS 16V M FM5 TP(5)
	C108	0CE1076F638	100M SMS 16V M FM5 TP(5)
	C109	0CN2230H948	0.022M 25V Z F TA26
	C110	0CE2276H638	220UF SMS 25V M FM5 TP5
	C111	0CE1076F638	100M SMS 16V M FM5 TP(5)
	C112	0CE1076F638	100M SMS 16V M FM5 TP(5)
	C122	0CE4775F638	470M SR 16V M FM5 TP(5)
	C134	0CE4766K638	47M SMS 50V M FM5 TP
	C135	0CE2276H638	220UF SMS 25V M FM5 TP5
	C136	0CN2230H948	0.022M 25V Z F TA26
	C137	0CN2230H948	0.022M 25V Z F TA26
	C201	0CQ4731N409	0.047U 100V J POLY TP
	C202	0CE1064F638	10M SRA 16V M FM5 TP(5)
	C203	0CQ2231N409	0.022U 100V J POLY TP
	C204	0CE1064F638	10M SRA 16V M FM5 TP(5)
	C205	0CQ4731N409	0.047U 100V J POLY TP
	C206	0CE1051K636	1.0U SM 50V M FM5 BP TP(D)
	C207	0CE1066K638	10M SMS 50V M FM5 TP(5)
	C208	0CE1066K638	10M SMS 50V M FM5 TP(5)
	C209	0CE4754K638	4.7M SRA 50V M FM5 TP(5)
	C210	0CE4754K638	4.7M SRA 50V M FM5 TP(5)
	C211	0CE1051K636	1.0U SM 50V M FM5 BP TP(D)
	C212	0CQ2721N409	0.0027M 100V J POLY TP
	C213	0CE4766F638	47M SMS 16V M FM5 TP5
	C214	0CQ4721N409	0.0047U 100V J POLY TP
	C215	0CE3366F638	33M SMS 16V M FM5 TP(5)
	C216	0CE2264F638	22M SRA 16V M FM5 TP(5)
	C218	0CC8200K415	82P 50V J NP0 TP
	C219	0CN2210K518	220P 50V K B TA26
	C220	0CN1030F678	0.01M 16V M Y TA26
	C221	0CQ4731N409	0.047U 100V J POLY TP
	C222	0CK1030K945	0.01M 50V Z F TS
	C223	0CN1020K518	1000P 50V K B TA26
	C224	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
	C225	0CE4766F638	47M SMS 16V M FM5 TP5
	C226	0CE4746K638	0.47M SMS 50V M TP(5)
	C227	0CE2276H638	220UF SMS 25V M FM5 TP5
	C228	0CE4766F638	47M SMS 16V M FM5 TP5
	C229	0CE1044K638	0.1M SRA 50V M FM5 TP(5)
	C230	0CE1076F638	100M SMS 16V M FM5 TP(5)

AL	LOCA. NO	PART NO	DESCRIPTION
	C232	0CE2276H638	220UF SMS 25V M FM5 TP5
	C233	0CX2200K408	22P 50V J SL TP26
	C234	0CC1010K405	100P 50V J SL TS
	C235	0CN3310K518	330P 50V K B TA26
	C236	0CN2210K518	220P 50V K B TA26
	C237	0CN1030F678	0.01M 16V M Y TA26
	C238	0CN1030F678	0.01M 16V M Y TA26
	C288	0CN1030F678	0.01M 16V M Y TA26
	C301	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
	C302	0CN2230H948	0.022M 25V Z F TA26
	C304	0CN4730K948	0.047M 50V Z F TA26
	C305	0CN4730K948	0.047M 50V Z F TA26
	C306	0CE1064F638	10M SRA 16V M FM5 TP(5)
	C307	0CN1030F678	0.01M 16V M Y TA26
	C308	0CN1030F678	0.01M 16V M Y TA26
	C309	0CN3310K518	330P 50V K B TA26
	C310	0CN1810K518	180P 50V K B TA26
	C311	0CE1051K636	1.0U SM 50V M FM5 BP TP(D)
	C312	0CN7500K518	75P 50V K B TA26
	C313	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
	C314	0CN4730K948	0.047M 50V Z F TA26
	C315	0CN2230H948	0.022M 25V Z F TA26
	C316	0CE1076D638	100M SMS 10V M FM5 TP(5)
	C317	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
	C318	0CE1064F638	10M SRA 16V M FM5 TP(5)
	C319	0CN2230H948	0.022M 25V Z F TA26
	C320	0CN2230H948	0.022M 25V Z F TA26
	C321	0CX4700K408	47P 50V J SL TA26
	C322	0CE1064F638	10M SRA 16V M FM5 TP(5)
	C323	0CN2230H948	0.022M 25V Z F TA26
	C324	0CX2200K408	22P 50V J SL TP26
	C325	0CE1064F638	10M SRA 16V M FM5 TP(5)
	C326	0CE1064F638	10M SRA 16V M FM5 TP(5)
	C327	0CE1074D638	100M SRA 10V M FM5 TP(5)
	C328	0CN2230H948	0.022M 25V Z F TA26
	C329	0CN1030F678	0.01M 16V M Y TA26
	C330	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
	C331	0CN1030F678	0.01M 16V M Y TA26
	C332	0CN2230H948	0.022M 25V Z F TA26
	C333	0CN1020K518	1000P 50V K B TA26
	C334	0CE1076D638	100M SMS 10V M FM5 TP(5)
	C335	0CN2230H948	0.022M 25V Z F TA26
	C336	0CE1076D638	100M SMS 10V M FM5 TP(5)
	C337	0CN1030F678	0.01M 16V M Y TA26
	C338	0CN1010K518	100P 50V K B TA26
	C339	0CN1210K518	120P 50V K B TA26
	C340	0CX2700K408	27P 50V J SL TA26
	C341	0CN1030F678	0.01M 16V M Y TA26
	C342	0CC2410K415	240P 50P J NP0 TS
	C343	0CN4710K518	470P 50V K B TA26
	C344	0CE1074D638	100M SRA 10V M FM5 TP(5)
	C345	0CN2230H948	0.022M 25V Z F TA26
	C346	0CN1030F678	0.01M 16V M Y TA26

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AL	LOCA. NO	PART NO	DESCRIPTION
	C347	0CN1030F678	0.01M 16V M Y TA26
	C348	0CE1044K638	0.1M SRA 50V M FM5 TP(5)
	C349	0CE1076D638	100M SMS 10V M FM5 TP(5)
	C350	0CN2230H948	0.022M 25V Z F TA26
	C351	0CE1044K638	0.1M SRA 50V M FM5 TP(5)
	C352	0CN1030F678	0.01M 16V M Y TA26
	C353	0CE1044K638	0.1M SRA 50V M FM5 TP(5)
	C354	0CN1030F678	0.01M 16V M Y TA26
	C356	0CN1030F678	0.01M 16V M Y TA26
	C357	0CE4766F638	47M SMS 16V M FM5 TP5
	C358	0CN2230H948	0.022M 25V Z F TA26
	C359	0CN2230H948	0.022M 25V Z F TA26
	C360	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
	C362	0CN1010K518	100P 50V K B TA26
	C363	0CN1030F678	0.01M 16V M Y TA26
	C364	0CN1030F678	0.01M 16V M Y TA26
	C367	0CN1030F678	0.01M 16V M Y TA26
	C368	0CN1030F678	0.01M 16V M Y TA26
	C369	0CE4746K638	0.47M SMS 50V M TP(5)
	C370	0CK4720K945	4700P 50V Z F TS
	C371	0CN1030F678	0.01M 16V M Y TA26
	C372	0CN5610K518	560P 50V K B TA26
	C373	0CN1010K518	100P 50V K B TA26
	C374	0CE1076D638	100M SMS 10V M FM5 TP(5)
	C375	0CN2230H948	0.022M 25V Z F TA26
	C376	0CN1030F678	0.01M 16V M Y TA26
	C377	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
	C378	0CE1076D638	100M SMS 10V M FM5 TP(5)
	C379	0CN2230H948	0.022M 25V Z F TA26
	C380	0CE1076D638	100M SMS 10V M FM5 TP(5)
	C381	0CN2230H948	0.022M 25V Z F TA26
	C382	0CN1040K948	0.1M 50V Z F TA26
	C398	0CN2230H948	0.022M 25V Z F TA26
	C399	0CN2230H948	0.022M 25V Z F TA26
	C401	0CN2210K518	220P 50V K B TA26
	C402	0CQ6831N409	0.068U 100V J POLY TP
	C403	0CN1030F678	0.01M 16V M Y TA26
	C404	0CN2230H948	0.022M 25V Z F TA26
	C406	0CQ1031N409	0.01U 100V J POLY TP
	C407	0CN2230H948	0.022M 25V Z F TA26
	C408	0CE1076F638	100M SMS 16V M FM5 TP(5)
	C409	0CE4766F638	47M SMS 16V M FM5 TP5
	C410	0CE1064F638	10M SRA 16V M FM5 TP(5)
	C411	0CE1064F638	10M SRA 16V M FM5 TP(5)
	C412	0CE4775F638	470M SR 16V M FM5 TP(5)
	C413	0CE3354K638	3.3M SRA 50V M FM5 TP(5)
	C414	0CQ1031N409	0.01U 100V J POLY TP
	C415	0CQ5621N409	0.0056U 100V J POLY TP
	C416	0CE2264F638	22M SRA 16V M FM5 TP(5)
	C417	0CE2264F638	22M SRA 16V M FM5 TP(5)
	C418	0CN2230H948	0.022M 25V Z F TA26
	C419	0CE4766F638	47M SMS 16V M FM5 TP5
	C420	0CE4766F638	47M SMS 16V M FM5 TP5
	C421	0CE1064F638	10M SRA 16V M FM5 TP(5)
	C422	0CN2230H948	0.022M 25V Z F TA26

AL	LOCA. NO	PART NO	DESCRIPTION
	C423	0CE1064F638	10M SRA 16V M FM5 TP(5)
	C424	0CE4766F638	47M SMS 16V M FM5 TP5
	C425	0CN1020K518	1000P 50V K B TA26
	C428	0CN1020K518	1000P 50V K B TA26
	C429	0CE1064F638	10M SRA 16V M FM5 TP(5)
	C430	0CE1044K638	0.1M SRA 50V M FM5 TP(5)
	C431	0CE1044K638	0.1M SRA 50V M FM5 TP(5)
	C432	0CE1044K638	0.1M SRA 50V M FM5 TP(5)
	C433	0CE1064F638	10M SRA 16V M FM5 TP(5)
	C434	0CE1064F638	10M SRA 16V M FM5 TP(5)
	C435	0CE1064F638	10M SRA 16V M FM5 TP(5)
	C436	0CE4766F638	47M SMS 16V M FM5 TP5
	C438	0CE1064F638	10M SRA 16V M FM5 TP(5)
	C439	0CN1020K518	1000P 50V K B TA26
	C440	0CE4754K638	4.7M SRA 50V M FM5 TP(5)
	C441	0CQ1221N409	0.0012U 100V J POLY TP
	C442	0CQ2231N409	0.022U 100V J POLY TP
	C443	0CE1066K638	10M SMS 50V M FM5 TP(5)
	C444	0CQ1031N409	0.01U 100V J POLY TP
	C445	0CE4754K638	4.7M SRA 50V M FM5 TP(5)
	C446	0CE4766F638	47M SMS 16V M FM5 TP5
	C447	0CN1040K948	0.1M 50V Z F TA26
	C450	0CE1076D638	100M SMS 10V M FM5 TP(5)
	C460	0CN2230H948	0.022M 25V Z F TA26
	C461	0CE4766F638	47M SMS 16V M FM5 TP5
	C462	0CN1020K518	1000P 50V K B TA26
	C467	0CX2700K408	27P 50V J SL TA26
	C469	0CN1030F678	0.01M 16V M Y TA26
	C490	0CQ1031N409	0.01U 100V J POLY TP
	C501	0CE4766F638	47M SMS 16V M FM5 TP5
	C502	0CE4775F638	470M SR 16V M FM5 TP(5)
	C505	0CE4766K638	47M SMS 50V M FM5 TP
	C506	624-073C	FM0H473Z(0.047F/5.5V) TAP NEC
	C507	0CE4766F638	47M SMS 16V M FM5 TP5
	C508	0CN1030F678	0.01M 16V M Y TA26
	C509	0CE1051K636	1.0U SM 50V M FM5 BP TP(D)
	C510	0CN1030F678	0.01M 16V M Y TA26
	C511	0CC1510K405	150P 50V J SL TS
	C512	0CN1020K518	1000P 50V K B TA26
	C513	0CN1020K518	1000P 50V K B TA26
	C514	0CC5600K415	56P 50V J NP0 TP
	C516	0CN1030F678	0.01M 16V M Y TA26
	C517	0CN1030F678	0.01M 16V M Y TA26
	C518	0CN1030F678	0.01M 16V M Y TA26
	C519	0CN1030F678	0.01M 16V M Y TA26
	C520	0CN1030F678	0.01M 16V M Y TA26
	C521	0CN1030F678	0.01M 16V M Y TA26
	C522	0CN1030F678	0.01M 16V M Y TA26
	C524	0CQ1041N409	0.1U 100V J POLY TP
	C530	0CQ1041N409	0.1U 100V J POLY TP
	C531	0CN1010K518	100P 50V K B TA26
	C533	0CC2700K415	27P 50V J NP0 TP
	C534	0CC2200K415	22P 50V J NP0 TS
	C535	0CN1010K518	100P 50V K B TA26
	C539	0CN1010K518	100P 50V K B TA26

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AL	LOCA.NO	PART NO	DESCRIPTION
	C540	0CE4766F638	47M SMS 16V M FM5 TP5
	C541	0CN1030F678	0.01M 16V M Y TA26
	C542	0CN1030F678	0.01M 16V M Y TA26
	C548	0CN1030F678	0.01M 16V M Y TA26
	C549	0CN1020K518	1000P 50V K B TA26
	C555	0CE1076F638	100M SMS 16V M FM5 TP(5)
	C568	0CK2230K945	0.022M 50V Z F TS
	C577	0CE4766K638	47M SMS 50V M FM5 TP
	C597	0CQ1041N409	0.1U 100V J POLY TP
	C598	0CE1076F638	100M SMS 16V M FM5 TP(5)
	C599	0CN1810K518	180P 50V K B TA26
	C601	0CN2230H948	0.022M 25V Z F TA26
	C602	0CE4764F638	47M SRA/SS 16V M FM5 TP(5)
	C603	0CN1030F678	0.01M 16V M Y TA26
	C604	0CN1030F678	0.01M 16V M Y TA26
	C605	0CN1030F678	0.01M 16V M Y TA26
	C606	0CN1030F678	0.01M 16V M Y TA26
	C607	0CN1030F678	0.01M 16V M Y TA26
	C608	0CN1030F678	0.01M 16V M Y TA26
	C609	0CN1030F678	0.01M 16V M Y TA26
	C610	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
	C611	0CN1030F678	0.01M 16V M Y TA26
	C612	0CN2230H948	0.022M 25V Z F TA26
	C613	0CX3300K408	33P 50V J SL TA26
	C614	0CN1030F678	0.01M 16V M Y TA26
	C615	0CN1030F678	0.01M 16V M Y TA26
	C616	0CN2710K518	270P 50V K B TA26
	C617	0CX3900K408	39P 50V J SL TA26
	C618	0CN2210K518	220P 50V K B TA26
	C619	0CX4700K408	47P 50V J SL TA26
	C620	0CN1030F678	0.01M 16V M Y TA26
	C621	0CX3900K408	39P 50V J SL TA26
	C622	0CN2230H948	0.022M 25V Z F TA26
	C623	0CN3310K518	330P 50V K B TA26
	C624	0CE4764F638	47M SRA/SS 16V M FM5 TP(5)
	C625	0CX2200K408	22P 50V J SL TP26
	C626	0CX6800K408	68P 50V J SL TA26
	C627	0CN3310K518	330P 50V K B TA26
	C628	0CE4764F638	47M SRA/SS 16V M FM5 TP(5)
	C629	0CN2230H948	0.022M 25V Z F TA26
	C630	0CN1030F678	0.01M 16V M Y TA26
	C631	0CN2230H948	0.022M 25V Z F TA26
	C701	0CC0800K165	8PF 50V D N470 TR
	C702	0CN1030F678	0.01M 16V M Y TA26
	C703	0CN1030F678	0.01M 16V M Y TA26
	C704	0CN1810K518	180P 50V K B TA26
	C705	0CN1030F678	0.01M 16V M Y TA26
	C707	0CN1030F678	0.01M 16V M Y TA26
	C708	0CE4766F638	47M SMS 16V M FM5 TP5
	C710	0CN4710K518	470P 50V K B TA26
	C713	0CN2230H948	0.022M 25V Z F TA26
	C714	0CE1044K638	0.1M SRA 50V M FM5 TP(5)
	C715	0CQ1041N409	0.1U 100V J POLY TP
	C716	0CE1076F638	100M SMS 16V M FM5 TP(5)
	C717	0CQ1031N409	0.01U 100V J POLY TP
	C718	0CE2254K638	2.2M SRA 50V M FM5 TP(5)
	C719	0CN1030F678	0.01M 16V M Y TA26
	C720	0CX4700K408	47P 50V J SL TA26
	C722	0CE1076F638	100M SMS 16V M FM5 TP(5)
	C724	0CX4700K408	47P 50V J SL TA26
	C725	0CN1010K518	100P 50V K B TA26
	C743	0CE2254K638	2.2M SRA 50V M FM5 TP(5)
	C750	0CN1030F678	0.01M 16V M Y TA26
	C771	0CE1076F638	100M SMS 16V M FM5 TP(5)
	C772	0CN1030F678	0.01M 16V M Y TA26
	C773	0CE4754K638	4.7M SRA 50V M FM5 TP(5)
	C774	0CE4754K638	4.7M SRA 50V M FM5 TP(5)
	C775	0CE4754K638	4.7M SRA 50V M FM5 TP(5)
	C776	0CE1064F638	10M SRA 16V M FM5 TP(5)
	C777	0CE1064F638	10M SRA 16V M FM5 TP(5)
	C778	0CN1040K948	0.1M 50V Z F TA26
	C780	0CE1076D638	100M SMS 10V M FM5 TP(5)
	C781	0CN1030F678	0.01M 16V M Y TA26
	C782	0CN1010K518	100P 50V K B TA26
	C783	0CQ4721N409	0.0047U 100V J POLY TP
	C785	0CN2220F668	2200P 16V M X TA26
	C786	0CE2254K638	2.2M SRA 50V M FM5 TP(5)
	C787	0CN4720F668	4700P 16V M X TA26
	C788	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
	C789	0CK2220K945	2200P 50V Z F TS
	C790	0CQ3331N409	0.033U 100V J POLY TP
	C791	0CE1076D638	100M SMS 10V M FM5 TP(5)
	C792	0CN2230H948	0.022M 25V Z F TA26
	C795	0CN1020K518	1000P 50V K B TA26
	C901	0CE2274C638	220M SRA 6.3V M FM5 TP(5)
	C902	0CN1030F678	0.01M 16V M Y TA26
	C903	0CN1030F678	0.01M 16V M Y TA26
	C904	0CN1030F678	0.01M 16V M Y TA26
	C905	0CE4764F638	47M SRA/SS 16V M FM5 TP(5)
	C906	0CN1030F678	0.01M 16V M Y TA26

Diodes

	D101	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D102	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D103	0DD400309AB	IN4003A(1SR35-200A)5M/M TP ROH
	D104	0DD400309AB	IN4003A(1SR35-200A)5M/M TP ROH
	D106	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D201	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D202	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D203	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D204	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D205	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D207	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D208	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D210	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D211	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D212	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D233	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM

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AL	LOCA.NO	PART NO	DESCRIPTION
	D301	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D302	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D303	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D304	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D305	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D307	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D310	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D311	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D404	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D405	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D406	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D407	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D408	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D409	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D501	0DD400309AB	IN4003A(1SR35-200A)5M/M TP ROH
	D502	0DD400309AB	IN4003A(1SR35-200A)5M/M TP ROH
	D503	0DD400309AB	IN4003A(1SR35-200A)5M/M TP ROH
	D505	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D506	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D507	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D521	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D523	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D525	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D599	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D601	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D702	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D780	0DD400309AB	IN4003A(1SR35-200A)5M/M TP ROH
	D902	0DD400309AB	IN4003A(1SR35-200A)5M/M TP ROH

ICS

	IC101	0IKE780060A	KIA78006AP=KIA7806P(REG 6V 1A)
OR	IC101	0IMA780600A	AN7806 6V1AREG MATSUSHITA
	IC201	0IHI497540A	HD49754NT
	IC301	0ISA743700A	LA7437 (Y/C 1CHIP,NOT ADJ)
	IC302	0ISA735600A	LA7356 DETECT
	IC303	0IRH720700A	BA7207S SECAM DIP
	IC304	0ISA899700A	LC89970 (1H CCD) OC3600
	IC401	0IRH779000A	BA7790LS(AUDIO NORMAL)
	IC402	0ISA722200A	LA7222 (1780 AUDIO)
	IC403	0ISA701600A	LA7016 ANALOG SW
	IC501	668-817D	M38184MA-223FP(SY+TI)VT-223S
	IC502	0IGS744500A	GL7445 (MOTOR DRIV-1CH) GSS
	IC503	0IXI240200B	X24C02.8D EEP-ROM(2K CMOS)
	IC504	0IMT523000B	PST-523G(3.3V) LOW MITUSMI
	IC601	0ISA741100A	LA7411 22SD 2HD AMP(VCR)
	IC701	0IPH980000A	TDA9800 VIF PLL DEM & FM DET
	IC772	0ISM564900A	SDA5649 (VPS+PDC)
	RC901	668-880A	SBX1610-52 SONY VT-831D
	ZD519	0INE574000A	UPC574J 30V ZENER

Transistors

Q102	0TR103009AE	KRC103M-TP (KRC1203) KEC
Q103	0TR103009AF	KRA103M-TP (KRA2203) KEC
Q104	0TR127309AA	KTA1273-TP-Y (KTA966A)KEC
Q105	0TR193300AA	2SD1933(R)POWER ROHM-J
Q106	0TR193300AA	2SD1933(R)POWER ROHM-J
Q107	0TR193300AA	2SD1933(R)POWER ROHM-J
Q108	0TR103009AF	KRA103M-TP (KRA2203) KEC
Q109	0TR103009AE	KRC103M-TP (KRC1203) KEC
Q201	0TR319909AF	KTC3199-BL MINI TP KEC
Q202	0TR319909AF	KTC3199-BL MINI TP KEC
Q203	0TR319909AF	KTC3199-BL MINI TP KEC
Q204	0TR319909AF	KTC3199-BL MINI TP KEC
Q206	0TR126609AE	KTA1266-GR,TP(KTA1015),KEC
Q208	0TR104009AD	KRC104M(50V 100MA) KEC
Q209	0TR319909AF	KTC3199-BL MINI TP KEC
Q210	0TR117009AA	FET KTK117A KEC TP
Q211	0TR103009AE	KRC103M-TP (KRC1203) KEC
Q301	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
Q302	0TR126709AC	KTA1267-GR MINI TP KEC
Q304	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
Q305	0TR126709AC	KTA1267-GR MINI TP KEC
Q306	0TR103009AE	KRC103M-TP (KRC1203) KEC
Q307	0TR126709AC	KTA1267-GR MINI TP KEC
Q309	0TR103009AE	KRC103M-TP (KRC1203) KEC
Q310	0TR126709AC	KTA1267-GR MINI TP KEC
Q311	0TR103009AE	KRC103M-TP (KRC1203) KEC
Q312	0TR103009AE	KRC103M-TP (KRC1203) KEC
Q313	0TR103009AE	KRC103M-TP (KRC1203) KEC
Q401	0TR320509AB	KTC3205-TP-Y (KTC2236A)KEC
Q402	0TR126709AC	KTA1267-GR MINI TP KEC
Q403	0TR103009AE	KRC103M-TP (KRC1203) KEC
Q404	0TR103009AF	KRA103M-TP (KRA2203) KEC
Q405	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
Q407	0TR126709AC	KTA1267-GR MINI TP KEC
Q408	0TR126709AC	KTA1267-GR MINI TP KEC
Q409	0TR103009AE	KRC103M-TP (KRC1203) KEC
Q410	0TR103009AE	KRC103M-TP (KRC1203) KEC
Q411	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
Q412	0TR126709AC	KTA1267-GR MINI TP KEC
Q413	0TR126709AC	KTA1267-GR MINI TP KEC
Q414	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
Q415	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
Q416	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
Q417	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
Q418	0TR103009AE	KRC103M-TP (KRC1203) KEC
Q430	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
Q464	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
Q501	0TR104009AD	KRC104M(50V 100MA) KEC
Q502	0TR104009AD	KRC104M(50V 100MA) KEC
Q503	0TR104009AD	KRC104M(50V 100MA) KEC
Q504	0TR126609AE	KTA1266-GR,TP(KTA1015),KEC
Q505	0TR319909AF	KTC3199-BL MINI TP KEC
Q506	0TR319909AF	KTC3199-BL MINI TP KEC
Q512	0TR104009AD	KRC104M(50V 100MA) KEC
Q560	0TR104009AD	KRC104M(50V 100MA) KEC
Q599	0TR104009AD	KRC104M(50V 100MA) KEC
Q601	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
Q602	0TR126609AE	KTA1266-GR,TP(KTA1015),KEC

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AL	LOCA. NO	PART NO	DESCRIPTION
	Q603	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
	Q604	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
	Q701	0TR319809AA	KTC3198-TP-Y (KTC1815)KEC
	Q709	0TR319809AA	KTC3198-TP-Y (KTC1815)KEC
	Q771	0TR103009AF	KRA103M-TP (KRA2203) KEC
	Q772	0TR103009AF	KRA103M-TP (KRA2203) KEC
	Q773	0TR103009AF	KRA103M-TP (KRA2203) KEC
	Q775	0TR104009AD	KRC104M(50V 100MA) KEC
	Q776	0TR104009AD	KRC104M(50V 100MA) KEC
	Q777	0TR104009AD	KRC104M(50V 100MA) KEC
	Q780	0TR319909AF	KTC3199-BL MINI TP KEC
	Q781	0TR126709AC	KTA1267-GR MINI TP KEC

Diode Leds

	LD903	0DL162000AA	KLR162E (RD) KEC
	LD920	0DL162000AA	KLR162E (RD) KEC
	LD930	0DL162000AA	KLR162E (RD) KEC

Coil & Transformer

	L201	0LR1000K035	100M K 6X6 L5 TP
	L202	0LR1000K035	100M K 6X6 L5 TP
	L203	0LR1000K035	100M K 6X6 L5 TP
	L301	0LR1000K035	100M K 6X6 L5 TP
	L302	0LR0392K035	39M K 6X6 L5 TP
	L303	0LR1000K035	100M K 6X6 L5 TP
	L304	0LA1000K018	100M K 2.3X3.4 L5 TP
	L306	0LR1000K035	100M K 6X6 L5 TP
	L307	0LR1000K035	100M K 6X6 L5 TP
	L308	0LA1000K018	100M K 2.3X3.4 L5 TP
	L310	0LA0561K018	5.6M K 2.3X3.4 L5 TP
	L311	0LR1000K035	100M K 6X6 L5 TP
	L312	0LR1000K035	100M K 6X6 L5 TP
	L314	0LA0472K018	47M K 2.3X3.4 L5 TP
	L316	0LA0122K018	12M K 2.3X3.4 L5 TP
	L317	0LR1000K035	100M K 6X6 L5 TP
	L318	0LR1000K035	100M K 6X6 L5 TP
	L319	0LR1000K035	100M K 6X6 L5 TP
	L401	0LA0102K018	10M K 2.3X3.4 L5 TP
	L402	0LR8200K035	820M K 6X6 L5 TP
	L403	0LA0102K018	10M K 2.3X3.4 L5 TP
	L404	0LA1000K018	100M K 2.3X3.4 L5 TP
	L405	0LA1000K018	100M K 2.3X3.4 L5 TP
	L406	0LA0472K018	47M K 2.3X3.4 L5 TP
	L407	0LR1502J045	0.015H J 6X7 L5 TP
	L408	0LA1000K018	100M K 2.3X3.4 L5 TP
	L409	0LR1000K035	100M K 6X6 L5 TP
	L410	0LA0102K018	10M K 2.3X3.4 L5 TP
	L420	0LR1000K035	100M K 6X6 L5 TP
	L443	0LA0152K018	15M K 2.3X3.4 L5 TP
	L444	0LA0101K018	1.0M K 2.3X3.4 L5 TP
	L503	0LR1000K035	100M K 6X6 L5 TP
	L504	0LR1000K035	100M K 6X6 L5 TP
	L505	0LR1000K035	100M K 6X6 L5 TP
	L508	0LR0222K035	22M K 6X6 L5 TP
	L510	0LR0102K035	10M K 6X6 L5 TP

AL	LOCA. NO	PART NO	DESCRIPTION
	L601	0LR1000K035	100M K 6X6 L5 TP
	L602	0LA0152K018	15M K 2.3X3.4 L5 TP
	L603	0LA2700K018	270U K 2.3X3.4 L5 TP
	L604	0LA0822K018	82M K 2.3X3.4 L5 TP
	L605	0LA0102K018	10M K 2.3X3.4 L5 TP
	L606	0LA0472K018	47M K 2.3X3.4 L5 TP
	L607	0LA0332K018	33M K 2.3X3.4 L5 TP
	L608	0LA0222K018	22M K 2.3X3.4 L5 TP
	L609	0LA1800K018	180M K 2.3X3.4 L5 TP
	L610	0LR1000K035	100M K 6X6 L5 TP
	L611	0LR1000K035	100M K 6X6 L5 TP
	L612	0LA1000K018	100M K 2.3X3.4 L5 TP
	L701	0LA0222K018	22M K 2.3X3.4 L5 TP
	L703	0LA0102K018	10M K 2.3X3.4 L5 TP
	L704	0LA0222K018	22M K 2.3X3.4 L5 TP
	L705	0LA0332K018	33M K 2.3X3.4 L5 TP
	L706	0LA0122K018	12M K 2.3X3.4 L5 TP
	L707	0LA0222K018	22M K 2.3X3.4 L5 TP
	L709	0LA0332K018	33M K 2.3X3.4 L5 TP
	L710	0LA0122K018	12M K 2.3X3.4 L5 TP
	L713	0LR1000K035	100M K 6X6 L5 TP
	L771	0LA0222K018	22M K 2.3X3.4 L5 TP
	L772	0LR1000K035	100M K 6X6 L5 TP
	L773	0LA0222K018	22M K 2.3X3.4 L5 TP
	L774	0LA0332K018	33M K 2.3X3.4 L5 TP
	L775	0LA0332K018	33M K 2.3X3.4 L5 TP
	L780	637-001L	DHOKE 0.87UH-K (D/S)
	L781	0LA0102K018	10M K 2.3X3.4 L5 TP
	L782	0LR1000K035	100M K 6X6 L5 TP
	L790	0LA0102K018	10M K 2.3X3.4 L5 TP
	L901	0LR1000K035	100M K 6X6 L5 TP
	T705	633-085A	V-COIL 2920N-K5592Z 77.8 TOKO
	T402	633-032B	COIL BIAS-OSC DONG KWANG(1280)

Filters

	F701	616-712A	SFSL5.5MCB MURATA
	T401	616-069C	LPF 12KHZ(JH-1058) SAMMI
	T703	616-036B	TRAP TPS5.5MB MURA
	T704	616-341A	CERAMIC TPS6.5MB
	SF702	6200RPS001A	G1966M SIMENS BG CE

Resistors

	R101	0RD1001F608	1.0K 1/6W 5 TA26
	R105	0RD1001F608	1.0K 1/6W 5 TA26
	R106	0RD1001F608	1.0K 1/6W 5 TA26
	R107	0RD1001F608	1.0K 1/6W 5 TA26
	R108	0RD1001F608	1.0K 1/6W 5 TA26
	R109	0RD1001F608	1.0K 1/6W 5 TA26
	R110	0RD1201F608	1.2K 1/6W 5 TA26
	R111	0RD2202F608	22K 1/6W 5 TA26
	R201	0RD2202F608	22K 1/6W 5 TA26
	R202	0RD3901F608	3.9K 1/6W 5 TA26
	R203	0RD6802F608	68K 1/6W 5 TA26
	R204	0RD2703F608	270K 1/6W 5 TA26

RPL

AL	LOCA. NO	PART NO	DESCRIPTION
	R205	0RD2702F608	27K 1/6W 5 TA26
	R207	0RD8203F608	820K 1/6W 5 TA26
	R208	0RD5603F608	560K 1/6W 5 TA26
	R209	0RD6803F608	680K 1/6W 5 TA26
	R210	0RD2702F608	27K 1/6W 5 TA26
	R211	0RD8202F608	82K 1/6W 5 TA26
	R212	0RD1004F608	1.0M 1/6W 5 TA26
	R213	0RD8202F608	82K 1/6W 5 TA26
	R215	0RD2203F608	220K 1/6W 5 TA26
	R216	0RD8202F608	82K 1/6W 5 TA26
	R217	0RD5601F608	5.6K 1/6W 5 TA26
	R218	0RD4701F608	4.7K 1/6W 5 TA26
	R219	0RD4700F608	470 1/6W 5 TA26
	R220	0RD4700F608	470 1/6W 5 TA26
	R221	0RD1202F608	12K 1/6W 5 TA26
	R222	0RD6800F608	680 1/6W 5 TA26
	R223	0RD1004F608	1.0M 1/6W 5 TA26
	R224	0RD1003F608	100K 1/6W 5 TA26
	R225	0RD1001F608	1.0K 1/6W 5 TA26
	R226	0RD1001F608	1.0K 1/6W 5 TA26
	R227	0RD6802F608	68K 1/6W 5 TA26
	R228	0RD1502F608	15K 1/6W 5 TA26
	R229	0RD1002F608	10K 1/6W 5 TA26
	R230	0RD2201F608	2.2K 1/6W 5 TA26
	R231	0RD3302F608	33K 1/6W 5 TA26
	R232	0RD1002F608	10K 1/6W 5 TA26
	R235	0RD1003F608	100K 1/6W 5 TA26
	R236	0RD5601F608	5.6K 1/6W 5 TA26
	R237	0RD2201F608	2.2K 1/6W 5 TA26
	R238	0RD6801F608	6.8K 1/6W 5 TA26
	R239	0RD6802F608	68K 1/6W 5 TA26
	R240	0RD4701F608	4.7K 1/6W 5 TA26
	R241	0RD2202F608	22K 1/6W 5 TA26
	R250	0RD2201F608	2.2K 1/6W 5 TA26
	R251	0RD5601F608	5.6K 1/6W 5 TA26
	R252	0RD3303F608	330K 1/6W 5 TA26
	R253	0RD5600F608	560 1/6W 5 TA26
	R254	0RD6803F608	680K 1/6W 5 TA26
	R255	0RD3902F608	39K 1/6W 5 TA26
	R257	0RD5602F608	56K 1/6W 5 TA26
	R258	0RD2701F608	2.7K 1/6W 5 TA26
	R259	0RD1501F608	1.5K 1/6W 5 TA26
	R260	0RD8201F608	8.2K 1/6W 5 TA26
	R261	0RD3301F608	3.3K 1/6W 5 TA26
	R262	0RD5601F608	5.6K 1/6W 5 TA26
	R263	0RD5601F608	5.6K 1/6W 5 TA26
	R264	0RD1001F608	1.0K 1/6W 5 TA26
	R270	0RD1002F608	10K 1/6W 5 TA26
	R280	0RD3301F608	3.3K 1/6W 5 TA26
	R290	0RD1001F608	1.0K 1/6W 5 TA26
	R291	0RD1003F608	100K 1/6W 5 TA26
	R292	0RD1803F608	180K 1/6W 5 TA26
	R301	0RD3301F608	3.3K 1/6W 5 TA26
	R302	0RD1001F608	1.0K 1/6W 5 TA26

AL	LOCA. NO	PART NO	DESCRIPTION
	R303	0RD2201F608	2.2K 1/6W 5 TA26
	R304	0RD2701F608	2.7K 1/6W 5 TA26
	R305	0RD4701F608	4.7K 1/6W 5 TA26
	R306	0RD1501F608	1.5K 1/6W 5 TA26
	R307	0RD1002F608	10K 1/6W 5 TA26
	R308	0RD2201F608	2.2K 1/6W 5 TA26
	R309	0RD1802F608	18K 1/6W 5 TA26
	R310	0RD1801F608	1.8K 1/6W 5 TA26
	R311	0RD5602F608	56K 1/6W 5 TA26
	R312	0RD8201F608	8.2K 1/6W 5 TA26
	R313	0RD1001F608	1.0K 1/6W 5 TA26
	R314	0RD6800F608	680 1/6W 5 TA26
	R315	0RD1000F608	100 1/6W 5 TA26
	R316	0RD1001F608	1.0K 1/6W 5 TA26
	R317	0RD1000F608	100 1/6W 5 TA26
	R320	0RD1001F608	1.0K 1/6W 5 TA26
	R321	0RD3302F608	33K 1/6W 5 TA26
	R322	0RD5600F608	560 1/6W 5 TA26
	R323	0RD1202F608	12K 1/6W 5 TA26
	R324	0RD1001F608	1.0K 1/6W 5 TA26
	R325	0RD2201F608	2.2K 1/6W 5 TA26
	R326	0RD1001F608	1.0K 1/6W 5 TA26
	R327	0RD1003F608	100K 1/6W 5 TA26
	R328	0RD1001F608	1.0K 1/6W 5 TA26
	R329	0RD2702F608	27K 1/6W 5 TA26
	R330	0RD6800F608	680 1/6W 5 TA26
	R331	0RD2201F608	2.2K 1/6W 5 TA26
	R332	0RD1001F608	1.0K 1/6W 5 TA26
	R333	0RD1000F608	100 1/6W 5 TA26
	R334	0RD2201F608	2.2K 1/6W 5 TA26
	R335	0RD1000F608	100 1/6W 5 TA26
	R336	0RD1201F608	1.2K 1/6W 5 TA26
	R337	0RD3302F608	33K 1/6W 5 TA26
	R338	0RD3903F608	390K 1/6W 5 TA26
	R339	0RD1002F608	10K 1/6W 5 TA26
	R340	0RD6800F608	680 1/6W 5 TA26
	R341	0RD7501F608	7.5K 1/6W 5 TA26
	R342	0RD8202F608	82K 1/6W 5 TA26
	R343	0RD1001F608	1.0K 1/6W 5 TA26
	R344	0RD7501F608	7.5K 1/6W 5 TA26
	R345	0RD3300F608	330 1/6W 5 TA26
	R377	0RD1000F608	100 1/6W 5 TA26
	R401	0RD1002F608	10K 1/6W 5 TA26
	R402	0RD4702F608	47K 1/6W 5 TA26
	R403	0RD0472F608	47 1/6W 5 TA26
	R404	0RD3302F608	33K 1/6W 5 TA26
	R405	0RD0102F608	10 1/6W 5 TA26
	R406	0RD0102F608	10 1/6W 5 TA26
	R407	0RD1002F608	10K 1/6W 5 TA26
	R408	0RD0752F608	75 1/6W 5 TA26
	R409	0RD0752F608	75 1/6W 5 TA26
	R410	0RD0752F608	75 1/6W 5 TA26
	R411	0RD0752F608	75 1/6W 5 TA26
	R412	0RD3300F608	330 1/6W 5 TA26

RPL

AL	LOCA. NO	PART NO	DESCRIPTION
	R413	0RD3300F608	330 1/6W 5 TA26
	R414	0RD4701F608	4.7K 1/6W 5 TA26
	R415	0RD3303F608	330K 1/6W 5 TA26
	R416	0RD1202F608	12K 1/6W 5 TA26
	R417	0RD2201F608	2.2K 1/6W 5 TA26
	R418	0RD5600F608	560 1/6W 5 TA26
	R419	0RD4701F608	4.7K 1/6W 5 TA26
	R422	0RD3900F608	390 1/6W 5 TA26
	R423	0RD5600F608	560 1/6W 5 TA26
	R424	0RD5600F608	560 1/6W 5 TA26
	R425	0RD6802F608	68K 1/6W 5 TA26
	R426	0RD1003F608	100K 1/6W 5 TA26
	R427	0RD0752F608	75 1/6W 5 TA26
	R428	0RD0752F608	75 1/6W 5 TA26
	R429	0RD8201F608	8.2K 1/6W 5 TA26
	R430	0RD2202F608	22K 1/6W 5 TA26
	R431	0RD1004F608	1.0M 1/6W 5 TA26
	R432	0RD8201F608	8.2K 1/6W 5 TA26
	R433	0RD8201F608	8.2K 1/6W 5 TA26
	R434	0RD5602F608	56K 1/6W 5 TA26
	R435	0RD6801F608	6.8K 1/6W 5 TA26
	R436	0RD1201F608	1.2K 1/6W 5 TA26
	R437	0RD8201F608	8.2K 1/6W 5 TA26
	R438	0RD1502F608	15K 1/6W 5 TA26
	R439	0RD1002F608	10K 1/6W 5 TA26
	R440	0RD1002F608	10K 1/6W 5 TA26
	R441	0RD4702F608	47K 1/6W 5 TA26
	R442	0RD3900F608	390 1/6W 5 TA26
	R443	0RD4702F608	47K 1/6W 5 TA26
	R444	0RD4702F608	47K 1/6W 5 TA26
	R445	0RD1001F608	1.0K 1/6W 5 TA26
	R446	0RD5600F608	560 1/6W 5 TA26
	R447	0RD5600F608	560 1/6W 5 TA26
	R448	0RD4700F608	470 1/6W 5 TA26
	R449	0RD0102F608	10 1/6W 5 TA26
	R450	0RD1802F608	18K 1/6W 5 TA26
	R451	0RD2201F608	2.2K 1/6W 5 TA26
	R452	0RD5601F608	5.6K 1/6W 5 TA26
	R453	0RD1000F608	100 1/6W 5 TA26
	R454	0RD2702F608	27K 1/6W 5 TA26
	R455	0RD5600F608	560 1/6W 5 TA26
	R456	0RD1001F608	1.0K 1/6W 5 TA26
	R458	0RD1202F608	12K 1/6W 5 TA26
	R459	0RD2201F608	2.2K 1/6W 5 TA26
	R460	0RD6802F608	68K 1/6W 5 TA26
	R464	0RD1001F608	1.0K 1/6W 5 TA26
	R501	0RD1004F608	1.0M 1/6W 5 TA26
	R502	0RD4704F608	4.7M 1/6W 5 TA26
	R503	0RD6802F608	68K 1/6W 5 TA26
	R504	0RD1002F608	10K 1/6W 5 TA26
	R505	0RD2201F608	2.2K 1/6W 5 TA26
	R506	0RD6802F608	68K 1/6W 5 TA26
	R507	0RD4701F608	4.7K 1/6W 5 TA26
	R510	0RD1002F608	10K 1/6W 5 TA26
	R511	0RD4701F608	4.7K 1/6W 5 TA26

AL	LOCA. NO	PART NO	DESCRIPTION
	R512	0RD4701F608	4.7K 1/6W 5 TA26
	R513	0RD1002F608	10K 1/6W 5 TA26
	R514	0RD1002F608	10K 1/6W 5 TA26
	R515	0RD3302F608	33K 1/6W 5 TA26
	R516	0RD3302F608	33K 1/6W 5 TA26
	R517	0RD4701F608	4.7K 1/6W 5 TA26
	R518	0RD1802F608	18K 1/6W 5 TA26
	R520	0RD1002F608	10K 1/6W 5 TA26
	R521	0RD1002F608	10K 1/6W 5 TA26
	R528	0RD1003F608	100K 1/6W 5 TA26
	R536	0RD4701F608	4.7K 1/6W 5 TA26
	R537	0RD4701F608	4.7K 1/6W 5 TA26
	R539	0RD4701F608	4.7K 1/6W 5 TA26
	R540	0RD4701F608	4.7K 1/6W 5 TA26
	R541	0RD4701F608	4.7K 1/6W 5 TA26
	R542	0RD4701F608	4.7K 1/6W 5 TA26
	R543	0RD4701F608	4.7K 1/6W 5 TA26
	R546	0RD1800F608	180 1/6W 5 TA26
	R547	0RD1502F608	15K 1/6W 5 TA26
	R548	0RD1202F608	12K 1/6W 5 TA26
	R549	0RD2202F608	22K 1/6W 5 TA26
	R552	0RD3302F608	33K 1/6W 5 TA26
	R553	0RD3302F608	33K 1/6W 5 TA26
	R556	0RD1802F608	18K 1/6W 5 TA26
	R564	0RD1001F608	1.0K 1/6W 5 TA26
	R565	0RD1001F608	1.0K 1/6W 5 TA26
	R566	0RD1001F608	1.0K 1/6W 5 TA26
	R567	0RD1001F608	1.0K 1/6W 5 TA26
	R568	0RD1001F608	1.0K 1/6W 5 TA26
	R575	0RD4701F608	4.7K 1/6W 5 TA26
	R576	0RD4701F608	4.7K 1/6W 5 TA26
	R577	0RD4701F608	4.7K 1/6W 5 TA26
	R579	0RD4701F608	4.7K 1/6W 5 TA26
	R580	0RD1003F608	100K 1/6W 5 TA26
	R581	614-011B	PRW 3.3/2W 10MM FORM/BULK SUNG
	R585	0RD6802F608	68K 1/6W 5 TA26
	R588	0RD8201F608	8.2K 1/6W 5 TA26
	R589	0RD1002F608	10K 1/6W 5 TA26
	R594	0RD1001F608	1.0K 1/6W 5 TA26
	R595	0RD1001F608	1.0K 1/6W 5 TA26
	R597	0RD8201F608	8.2K 1/6W 5 TA26
	R598	0RD8201F608	8.2K 1/6W 5 TA26
	R599	0RD2201F608	2.2K 1/6W 5 TA26
	R601	0RD2202F608	22K 1/6W 5 TA26
	R602	0RD1501F608	1.5K 1/6W 5 TA26
	R603	0RD4702F608	47K 1/6W 5 TA26
	R604	0RD3302F608	33K 1/6W 5 TA26
	R605	0RD6800F608	680 1/6W 5 TA26
	R606	0RD6800F608	680 1/6W 5 TA26
	R607	0RD3302F608	33K 1/6W 5 TA26
	R608	0RD3900F608	390 1/6W 5 TA26
	R609	0RD1501F608	1.5K 1/6W 5 TA26
	R610	0RD2201F608	2.2K 1/6W 5 TA26
	R611	0RD1001F608	1.0K 1/6W 5 TA26
	R612	0RD5601F608	5.6K 1/6W 5 TA26

AL	LOCA.NO	PART NO	DESCRIPTION
	R613	ORD2201F608	2.2K 1/6W 5 TA26
	R614	ORD5601F608	5.6K 1/6W 5 TA26
	R615	ORD3900F608	390 1/6W 5 TA26
	R616	ORD8200F608	820 1/6W 5 TA26
	R617	ORD2201F608	2.2K 1/6W 5 TA26
	R618	ORD3900F608	390 1/6W 5 TA26
	R619	ORD8200F608	820 1/6W 5 TA26
	R620	ORD1800F608	180 1/6W 5 TA26
	R621	ORD6800F608	680 1/6W 5 TA26
	R622	ORD6800F608	680 1/6W 5 TA26
	R623	ORD1201F608	1.2K 1/6W 5 TA26
	R624	ORD1800F608	180 1/6W 5 TA26
	R701	ORD2001F608	2.0K 1/6W 5 TA26
	R702	ORD2202F608	22K 1/6W 5 TA26
	R705	ORD1001F608	1.0K 1/6W 5 TA26
	R711	ORD3302F608	33K 1/6W 5 TA26
	R720	ORD3300F608	330 1/6W 5 TA26
	R723	ORD2202F608	22K 1/6W 5 TA26
	R724	ORD2200F608	220 1/6W 5 TA26
	R725	ORD2201F608	2.2K 1/6W 5 TA26
	R729	ORD0102F608	10 1/6W 5 TA26
	R731	ORD5601F608	5.6K 1/6W 5 TA26
	R732	ORD1201F608	1.2K 1/6W 5 TA26
	R734	ORD5602F608	56K 1/6W 5 TA26
	R736	ORD3300F608	330 1/6W 5 TA26
	R737	ORD2701F608	2.7K 1/6W 5 TA26
	R738	ORD3300F608	330 1/6W 5 TA26
	R739	ORD1201F608	1.2K 1/6W 5 TA26
	R760	ORD1001F608	1.0K 1/6W 5 TA26
	R771	ORD1003F608	100K 1/6W 5 TA26
	R772	ORD8202F608	82K 1/6W 5 TA26
	R773	ORD3302F608	33K 1/6W 5 TA26
	R781	ORD1001F608	1.0K 1/6W 5 TA26
	R782	ORD3301F608	3.3K 1/6W 5 TA26
	R784	ORD1202F608	12K 1/6W 5 TA26
	R785	ORD1500F608	150 1/6W 5 TA26
	R786	ORD6801F608	6.8K 1/6W 5 TA26
	R787	ORD1204F608	1.2M 1/6W 5 TA26
	R788	ORD1004F608	1.0M 1/6W 5 TA26
	R789	ORD8202F608	82K 1/6W 5 TA26
	R791	ORD6801F608	6.8K 1/6W 5 TA26
	R792	ORD1204F608	1.2M 1/6W 5 TA26
	R798	ORD1002F608	10K 1/6W 5 TA26
	R799	ORD2203F608	220K 1/6W 5 TA26
	R902	ORD4700F608	470 1/6W 5 TA26
	R903	ORD4700F608	470 1/6W 5 TA26
	R904	ORD4700F608	470 1/6W 5 TA26
	R907	ORD1802F608	18K 1/6W 5 TA26
	R908	ORD6801F608	6.8K 1/6W 5 TA26
	R909	ORD3301F608	3.3K 1/6W 5 TA26
	R910	ORD1801F608	1.8K 1/6W 5 TA26
	R911	ORD1201F608	1.2K 1/6W 5 TA26
	R912	ORD8200F608	820 1/6W 5 TA26
	R913	ORD6800F608	680 1/6W 5 TA26
	R914	ORD1802F608	18K 1/6W 5 TA26
	R915	ORD6801F608	6.8K 1/6W 5 TA26
	R916	ORD3301F608	3.3K 1/6W 5 TA26
	R917	ORD1801F608	1.8K 1/6W 5 TA26
	R918	ORD1201F608	1.2K 1/6W 5 TA26
	R919	ORD8200F608	820 1/6W 5 TA26
	R920	ORD6800F608	680 1/6W 5 TA26
	R921	ORD0222F608	22 1/6W 5 TA26
	R922	ORD1002F608	10K 1/6W 5 TA26

Variable Resistors

	VR201	613-032U	RH0638C15R0WA (100K)
	VR302	613-032J	RH0638CJ3R0UA (2.2K)
	VR303	613-032J	RH0638CJ3R0UA (2.2K)
	VR401	613-032W	RH0638CJ5R (220K)
	VR771	613-032Q	RH0638CJ4R0WA (22K)

Zener Diodes

	ZD101	0DZ130009AC	MTZ13B TP ROHM-K
	ZD102	0DZ130009AC	MTZ13B TP ROHM-K
	ZD103	0DZ150009BC	MTZ15B ROHM-K
	ZD401	0DZ100009BB	UZ10BSB MINI TP UNIZON
	ZD402	0DZ560009CA	MTZ5.6B TP ROHM-K
	ZD501	0DZ820009AA	MTZ8.2B TP ROHM-K
	ZD509	0DZ560009CA	MTZ5.6B TP ROHM-K
	ZD520	0DZ100009BB	UZ10BSB MINI TP UNIZON
	ZD594	0DZ560009CA	MTZ5.6B TP ROHM-K
	ZD596	0DZ560009CA	MTZ5.6B TP ROHM-K
	ZD597	0DZ560009CA	MTZ5.6B TP ROHM-K
	ZD598	0DZ560009CA	MTZ5.6B TP ROHM-K
	ZD901	0DZ560009CA	MTZ5.6B TP ROHM-K

Switch

	SW901	556-219A	SKHV10910A (GS ALPS)
	SW902	556-219A	SKHV10910A (GS ALPS)
	SW903	556-219A	SKHV10910A (GS ALPS)
	SW904	556-219A	SKHV10910A (GS ALPS)
	SW905	556-219A	SKHV10910A (GS ALPS)
	SW907	556-219A	SKHV10910A (GS ALPS)
	SW908	556-219A	SKHV10910A (GS ALPS)
	SW909	556-219A	SKHV10910A (GS ALPS)
	SW910	556-219A	SKHV10910A (GS ALPS)
	SW911	556-219A	SKHV10910A (GS ALPS)
	SW912	556-219A	SKHV10910A (GS ALPS)
	SW913	556-219A	SKHV10910A (GS ALPS)
	SW915	556-219A	SKHV10910A (GS ALPS)
	SW916	556-219A	SKHV10910A (GS ALPS)

Miscellaneous Electrical Parts

	ST401	573-017A	SOCKET BRS-21A (ANGLE) BLACK
	TU771	521-413B	TUNER TUKG4-D01F LGEC TYPE
	X201	529-020B	X-TAL 3.579545MHZ 20PPM GRAY L=4.0
	X301	529-020P	X-TAL 4.433619MHZ 15PPM GRAY L=4.0
	X501	618-017A	RESONATOR FCR6.0MCT2 TDK-JC TAPING)
	X502	529-001D	X-TAL 32.768KHZ(2X6) SEIKO

RPL

MV-55A SCHEMATIC DIAGRAM (PAL/SECAM/NTSC4.43)

NOTICE
Since this is a basic schematic diagram.
The value of components and some partical connection aresubject to change for improvement.

The components marked ⚠ conform to VDE or IEC guidelines and are essential for safe operation of the set. while those marked ⚠ are required for correct operation. Use specified parts only when replacing.

VALUE OF RESISTER. CAPACITOR AND INDUCTOR

1. Resistances are shown in ohm. K = 1.000 M = 1.000.000 .
2. Unless otherwise noted in schematic. all capacitor values less than 1 are expresses in mfd and the values more than 1 in pF
3. Unless otherwise noted in schematic. all coil values more than 1 are expressed in uH. and the values less than 1 in H.

OBSERVATION OF VOLTAGES AND WAVEFORMS

1. Voltages read with VTVM from point shown to chassis ground. line voltages 220 Volts. colour bar signal
2. Voltages reading may very ±20%.
3. The schematic shown is representative only.
4. All waveforms are taken using a wide band oscilloscope and a low capacity probe.
5. Check FINE TUNING. AGC. BRIGHTNESS. CONTRAST and COLOUR controls for best picture. make sure that CONTRAST and COLOUR controls are in mid position and BRIGHTNESS controls is almost in maximum position.
6. Waveforms are takrn using a standard colour bar signal.

★TABLE OF INCH CONVERSION

NO	CIRCUIT NO	INCH		REMARK
		14"	20"	
1	R702	75K	56K	RESISTOR-FIX 1/2W
2	R703	75K	56K	RESISTOR-FIX 1/2W
3	R804	8.2K	10K	RESISTOR-FIX 2W
4	R805	8.2K	10K	RESISTOR-FIX 2W
5	R806	8.2K	10K	RESISTOR-FIX 2W
6	FR703	1.6	1.0	RESISTOR-FUS 2W
7	C308	0.47	0.1	CAPACITOR-ELEC 50V
8	C402	772	862	CAPACITOR-MPP 1.6KV
9	C419	624	364	CAPACITOR-MPP 200V
10	L402	-L01W	-L02C	COIL. LINEARITY(150-)
11	T701	-207A	-207D	FBT(154-)
12	P901A/B	-010D	-010E	CONNECTOR ASSY(10P)
13	P601A/B	-802B	-802C	CONNECTOR ASSY(2P)
14		-100F	-226D	CPT SOCKET(381-)
15		-P68A	-P68B	PCB(111-)
16				
17				
18				

● TABLE OF SYSTEM CONNERSION

NO	CIRCUIT NO	SYSTEM		REMARK
		KL-M43 MODEL	KI-M43 MODEL	
1	R519	4.7M	-	RESISTOR-FIX 1/6W
2	C525	47	-	CAPACITOR-ELEC 16V
3	C526	10000P	-	CAPACITOR-TUBULAR 16V
4	C527	100P	-	CAPACITOR-TUBULAR 50V
5	C528	0.1	-	CAPACITOR-POLY 50V
6	C529	0.022	-	CAPACITOR-POLY 100V
7	C530	82	-	CAPACITOR-CERAM 50V
8	C531	0.22	-	CAPACITOR-MYLAR 100V
9	C532	82	-	CAPACITOR-CERAM 50V
10	C533	1	-	CAPACITOR-TANTAL 25V
11	L503	100u	-	INDUCTOR-AXIAL
12	Z501	103	-	FILTER-EMI 100V
13	J29	TIN WIRE	-	WIRE- TIN HDC 0.6H
14	P503	1P	-	PIN PLUG 1P
15	P903	1P	-	PIN PLUG 1P

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